DAIKIN

EDUS 04 - 740

Engineering Data
SPLIT

- Heat Pump -

D-Series

INVERTER

DAIKIN AC (AMERICAS), INC.

Split-System Room Air Conditioners D-Series

Heat Pump		
The Single Split Duct-Free System	**FTXS09DVJU**	**RX09FVJU**
	FTXS12DVJU	**RX12FVJU**
	FTXS15DVJU	**RX15FVJU**
	FTXS18DVJU	**RX18FVJU**
	FTXS24DVJU	**RX24FVJU**

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Cautions

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided and choose an outdoor unit with anti-corrosion treatment.

1. Power Supply

	Indoor Units	Outdoor Units	Power Supply
The Single Split Duct-Free System	FTXS09DVJU	RX09FVJU	1ϕ, 208-230V, 60Hz
	FTXS12DVJU	RX12FVJU	
	FTXS15DVJU	RX15FVJU	
	FTXS18DVJU	RX18FVJU	
	FTXS24DVJU	RX24FVJU	

Note: Power Supply Intake ; Outdoor Unit

2. Functions

Category	Functions	FTXS09·12DVJU RX09·12FVJU	FTXS15·18·24DVJU RX15·18·24FVJU	Category	Functions	FTXS09·12DVJU RX09·12FVJU	FTXS15·18·24DVJU RX15·18·24FVJU
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air Purifying Filter	—	—
	Operation Limit for Cooling (°FDB)	14~115	14~115		Photocatalytic Deodorizing Filter	—	—
	Operation Limit for Heating (°FWB)	5~64	5~64		Air Purifying Filter with Photocatalytic Deodorizing Function	○	○
	PAM Control	○	○		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—
Compressor	Oval Scroll Compressor	—	—				
	Swing Compressor	○	○		Mold Proof Air Filter	○	○
	Rotary Compressor	—	—		Wipe-clean Flat Panel	○	○
	Reluctance DC Motor	○	○		Washable Grille	—	—
Comfortable Airflow	Power-Airflow Flap	—	—		Filter Cleaning Indicator	—	—
	Power-Airflow Dual Flaps	○	○		Good-Sleep Cooling Operation	—	—
	Power-Airflow Diffuser	—	—	Timer	24-Hour On/Off Timer	○	○
	Wide-Angle Louvers	○	○		Night Set Mode	○	○
	Vertical Auto-Swing (Up and Down)	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Horizontal Auto-Swing (Right and Left)	—	○		Self-Diagnosis (Digital, LED) Display	○	○
	3-D Airflow	—	○		Wiring Error Check	—	—
	Comfort Airflow Mode	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	○	○
	3-Step Airflow (H/P Only)	—	—				
Comfort Control	Auto Fan Speed	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	—	—
	Indoor Unit Quiet Operation	○	○				
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	—	—
	Outdoor Unit Quiet Operation (Manual)	○	○		High Ceiling Application	—	—
	Intelligent Eye	○	○		Chargeless	33ft	33ft
	Quick Warming Function	○	○		Either Side Drain (Right or Left)	○	○
	Hot-Start Function	○	○		Power Selection	—	—
	Automatic Defrosting	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
Operation	Automatic Operation	○	○		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	○	○
	Program Dry Function	○	○				
	Fan Only	○	○		Remote Control Adapter (Normal Open Contact) (Option)	○	○
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—				
	Inverter Powerful Operation	○	○		DIII-NET Compatible (Adapter) (Option)	○	○
	Priority-Room Setting	—	—	Remote Controller	Wireless	○	○
	Cooling / Heating Mode Lock	—	—		Wired	—	—
	Home Leave Operation	○	○				
	Indoor Unit On/Off Switch	○	○				
	Signal Reception Indicator	○	○				
	Temperature Display	—	—				
	Another Room Operation	—	—				

Note: ○ : Holding Functions
— : No Functions

3. Specifications

60Hz 230V

Models	Indoor Units		FTXS09DVJU		FTXS12DVJU	
	Outdoor Units		RX09FVJU		RX12FVJU	
			Cooling	Heating	Cooling	Heating
Capacity Rated (Min.~Max.)		Btu/h	8,500 (5,100~8,500)	10,000 (5,100~10,000)	11,500 (5,500~11,500)	11,500 (5,500~11,500)
Moisture Removal		Pt/h	2.3	—	3.2	—
Running Current (Rated)		A	4.56	5.21	6.00	5.20
Power Consumption Rated (Min.~Max.)		W	850(300~850)	1,120(290~1,220)	1,350(300~1,350)	1,100(310~1,190)
Power Factor		%	81.1	93.4	97.1	92.0
EER (Rated)		Btu/h·W	10.0	—	8.5	—
COP (Rated)		W/W	—	2.62	—	3.06
Energy Efficiency	SEER		13.0	—	13.0	—
	HSPF		—	7.7	—	7.7
Piping Connections	Liquid	in (mm)	ϕ 1/4" (6.4 mm)		ϕ 1/4" (6.4 mm)	
	Gas	in (mm)	ϕ 3/8 (9.5 mm)		ϕ 3/8" (9.5 mm)	
	Drain	in (mm)	ϕ 11/16" (17.5 mm)		ϕ 11/16" (17.5 mm)	
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Max. Interunit Piping Length		ft (m)	65 (20 m)		65 (20 m)	
Max. Interunit Height Difference		ft (m)	49 (15 m)		49 (15 m)	
Chargeless		ft (m)	33 (10 m)		33 (10 m)	
Amount of Additional Charge of Refrigerant		oz/ft	0.22		0.22	
Indoor Units			**FTXS09DVJU**		**FTXS12DVJU**	
Front Panel Color			White		White	
Air Flow Rate	cfm (m^3/min)	H	246(7.0)	253(7.2)	242(6.8)	286(8.1)
		M	197(5.6)	220(6.2)	195(5.5)	237(6.7)
		L	148(4.2)	187(5.3)	148(4.2)	187(5.3)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	18		18	
	Speed	Steps	5 Steps, Quiet and Auto		5 Steps, Quiet and Auto	
Air Direction Control			Right, Left, Horizontal and Downward		Right, Left, Horizontal and Downward	
Air Filter			Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.18		0.18	
Power Consumption (Rated)		W	40		40	
Power Factor		%	96.6		96.6	
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)		in (mm)	10-3/4 × 30-7/8 × 7-11/16" (273 x 784.2 x 195.3 mm)		10-3/4 × 30-7/8 × 7-11/16" (273 x 784.2 x 195.3 mm)	
Packaged Dimensions (H×W×D)		in (mm)	10-3/16 × 32-13/16 × 12-13/16" (258.8 x 833.4 x 325.4 mm)		10-3/16 × 32-13/16 × 12-13/16" (258.8 x 833.4 x 325.4 mm)	
Weight		Lbs/kg	16.6 lbs / 7.5 kg		16.6 / 7.5 kg	
Gross Weight		Lbs/kg	25.0 lbs / 11.3 kg		25.0 lbs / 11.3 kg	
Operation Sound	H/M/L	dBA	38 / 32 / 25	38 / 33 / 28	40 / 33 / 26	39 / 34 / 29
Outdoor Units			**RX09FVJU**		**RX12FVJU**	
Casing Color			Ivory White		Ivory White	
Compressor	Type		Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model		1YC23NXD		1YC23NXD	
	Motor Output	W	600		600	
Refrigerant Oil	Type		FVC50K		FVC50K	
	Charge	oz	12.6		12.6	
Refrigerant	Type		R-410A		R-410A	
	Charge	Lbs/kg	1.76 lbs / 0.8 kg		2.20 / 1 kg	
Air Flow Rate	cfm (m^3/min)	H	1,120(31.7)	1,008(28.5)	1,031(29.2)	927(26.3)
		L	816(23.1)	813(23.0)	737(20.9)	737(20.9)
Fan	Type		Propeller		Propeller	
	Motor Output	W	31		31	
Running Current (Rated)		A	4.38	5.03	5.87	5.02
Power Consumption (Rated)		W	810	1,080	1,310	1,060
Power Factor		%	80.4	93.3	97.1	91.8
Dimensions (H×W×D)		in (mm)	21-5/8 × 30-1/8 × 11-1/4" (549.3 x 768.3 x 285.7 mm)		21-5/8 × 30-1/8 × 11-1/4" (549.3 x 768.3 x 285.7 mm)	
Packaged Dimensions (H×W×D)		in (mm)	25 × 34-5/8 × 14-3/16" (635 x 879.5 x 361.9 mm)		25 × 34-5/8 × 14-3/16" (635 x 879.5 x 361.9 mm)	
Weight		Lbs/kg	74.0 lbs / 33.5 kg		79.0 lbs / 35.8 kg	
Gross Weight		Lbs/kg	84.0 lbs / 38.1 kg		91.0 lbs / 41.2 kg	
Operation Sound	H / L	dBA	48 / —	49 / —	49 / —	51 / —
Drawing No.			3D056379		3D056380	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 80°FDB/67°FWB Outdoor ; 95°FDB/75°FWB	Indoor ; 70°FDB/60°FWB Outdoor ; 47°FDB/43°FWB	25 ft (7.5 m)

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

60Hz 230V

Model	Indoor Units		FTXS15DVJU		FTXS18DVJU	
	Outdoor Units		RX15FVJU		RX18FVJU	
			Cooling	Heating	Cooling	Heating
Capacity Rated (Min.~Max.)		Btu/h	15,000 (6,800~15,000)	18,000 (6,800~21,200)	18,000 (6,800~18,000)	21,600 (6,800~24,000)
Moisture Removal		Pt/h	3.4	—	4.3	—
Running Current (Rated)		A	6.01	7.58	7.67	9.58
Power Consumption Rated (Min.~Max.)		W	1,360(450~1,360)	1,730(450~2,540)	1,750(450~1,750)	2,200(450~2,620)
Power Factor		%	98.4	99.2	99.2	99.8
EER (Rated)		Btu/h·W	11.0	—	10.3	—
COP (Rated)		W/W	—	3.05	—	2.88
Energy Efficiency	SEER		13.0	—	13.0	—
	HSPF		—	7.7	—	7.7
Piping Connections	Liquid	in (mm)	ϕ 1/4" (6.4 mm)		ϕ 1/4" (6.4 mm)	
	Gas	in (mm)	ϕ 1/2" (12.7 mm)		ϕ 1/2" (12.7 mm)	
	Drain	in (mm)	ϕ 11/16" (17.5 mm)		ϕ 11/16" (17.5 mm)	
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Max. Interunit Piping Length		ft (m)	98.4' (30 m)		98.4' (30 m)	
Max. Interunit Height Difference		ft (m)	65.6' (20 m)		65.6' (20 m)	
Chargeless		ft (m)	33' (10 m)		33' (10 m)	
Amount of Additional Charge of Refrigerant		oz/ft	0.22		0.22	
Indoor Unit			**FTXS15DVJU**		**FTXS18DVJU**	
Front Panel Color			White		White	
Air Flow Rate	cfm (m³/min)	H	519(14.7)	515(14.6)	549(15.5)	609(17.2)
		M	436(12.3)	459(13.0)	476(13.5)	529(15.0)
		L	353(10.0)	402(11.4)	402(11.4)	448(12.7)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	43		43	
	Speed	Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.18		0.18	
Power Consumption (Rated)		W	40		40	
Power Factor		%	96.6		96.6	
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)		in (mm)	11-7/16 × 41-5/16 × 9-3/8" (292.1 x 1049.3 x 238.1 mm)		11-7/16 × 41-5/16 × 9-3/8" (292.1 x 1049.3 x 238.1 mm)	
Packaged Dimensions (H×W×D)		in (mm)	13-1/4 × 45-3/16 × 14-7/16" (336.5 x 1149.3 x 368.3 mm)		13-1/4 × 45-3/16 × 14-7/16" (336.5 x 1149.3 x 368.3 mm)	
Weight		Lbs/kg	26.5 lbs / 12 kg		26.5 lbs / 12 kg	
Gross Weight		Lbs/kg	38.0 lbs / 17.2 kg		38.0 lbs / 17.2 kg	
Operation Sound	H/M/L	dBA	45 / 41 / 36	44 / 40 / 35	45 / 41 / 36	44 / 40 / 35
Outdoor Unit			**RX15FVJU**		**RX18FVJU**	
Casing Color			Ivory White		Ivory White	
Compressor	Type		Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model		2YC32JXD		2YC32JXD	
	Motor Output	W	1,500		1,500	
Refrigerant Oil	Model		FVC50K		FVC50K	
	Charge	oz	21.8		21.8	
Refrigerant	Model		R-410A		R-410A	
	Charge	Lbs/kg	3.75 lbs / 1.7 kg		3.75 lbs / 1.7 kg	
Air Flow Rate	cfm (m³/min)	H	1,603(45.4)	1,367(38.7)	1,603(45.4)	1,367(38.7)
		L	1,451(41.1)	1,367(38.7)	1,451(41.1)	1,367(38.7)
Fan	Type		Propeller		Propeller	
	Motor Output	W	53		53	
Running Current (Rated)		A	5.83	7.4	7.49	9.40
Power Consumption (Rated)		W	1,320	1,690	1,710	2,160
Power Factor		%	98.4	99.3	99.3	99.9
Dimensions (H×W×D)		in (mm)	28-15/16 × 32-1/2 × 11-13/16" (733.4 x 825.5 x 298.4 mm)		28-15/16 × 32-1/2 × 11-13/16" (733.4 x 825.5 x 298.4 mm)	
Packaged Dimensions (H×W×D)		in (mm)	31-7/16 × 37-15/16 × 15-3/8" (800.1 x 962 x 393.7 mm)		31-7/16 × 37-15/16 × 15-3/8" (800.1 x 962 x 393.7 mm)	
Weight		Lbs/kg	117.0 lbs / 53.1 kg		117.0 lbs / 53.1 kg	
Gross Weight		Lbs/kg	133.0 lbs / 60.3 kg		133.0 lbs / 60.3 kg	
Operation Sound	H / L	dBA	51 / —	51 / —	51 / —	51 / —
Drawing No.			3D056381		3D056382	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 80°FDB/67°FWB Outdoor ; 95°FDB/75°FWB	Indoor ; 70°FDB/60°FWB Outdoor ; 47°FDB/43°FWB	25 ft (7.5 m)

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

60Hz 230V

Model	Indoor Units		FTXS24DVJU	
	Outdoor Units		RX24FVJU	
			Cooling	Heating
Capacity Rated (Min.~Max.)		Btu/h	22,000 (7,500~22,000)	24,000 (7,500~25,400)
Moisture Removal		Pt/h	6.3	—
Running Current (Rated)		A	11.35	12.43
Power Consumption Rated (Min.~Max.)		W	2,600(450~2,600)	2,850(450~3,320)
Power Factor		%	99.6	99.7
EER (Rated)		Btu/h·W	8.5	—
COP (Rated)		W/W	—	2.47
Energy Efficiency	SEER		13.0	—
	HSPF		—	7.7
Piping Connections	Liquid	in (mm)	ϕ 1/4" (6.4 mm)	
	Gas	in (mm)	ϕ 1/2" (12.7 mm)	
	Drain	in (mm)	ϕ 11/16" (17.5 mm)	
Heat Insulation			Both Liquid and Gas Pipes	
Max. Interunit Piping Length		ft (m)	98.4 (30 m)	
Max. Interunit Height Difference		ft (m)	65.6 (20 m)	
Chargeless		ft (m)	33 (10 m)	
Amount of Additional Charge of Refrigerant		oz/ft	0.22	
Indoor Unit			**FTXS24DVJU**	
Front Panel Color			White	
Air Flow Rate	cfm (m^3/min)	H	536(15.2)	586(16.6)
		M	473(13.4)	532(15.1)
		L	409(11.6)	477(13.5)
Fan	Type		Cross Flow Fan	
	Motor Output	W	43	
	Speed	Steps	5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.20	
Power Consumption (Rated)		W	45	
Power Factor		%	97.8	
Temperature Control			Microcomputer Control	
Dimensions (H×W×D)		in (mm)	11-7/16 × 41-5/16 × 9-3/8" (292.1 x 1049.3 x 238.1 mm)	
Packaged Dimensions (H×W×D)		in (mm)	13-1/4 × 45-3/16 × 14-7/16" (336.5 x 1149.3 x 368.3 mm)	
Weight		Lbs/kg	26.5 lbs / 12 kg	
Gross Weight		Lbs/kg	38.0 lbs / 17.2 kg	
Operation Sound	H/M/L	dBA	46 / 42 / 37	46 / 42 / 37
Outdoor Unit			**RX24FVJU**	
Casing Color			Ivory White	
Compressor	Type		Hermetically Sealed Swing Type	
	Model		2YC45EXD	
	Motor Output	W	1,900	
Refrigerant Oil	Model		FVC50K	
	Charge	oz	25.2	
Refrigerant	Model		R-410A	
	Charge	Lbs/kg	3.75 lbs / 1.7 kg	
Air Flow Rate	cfm (m^3/min)	H	1,752(49.6)	1,465(41.5)
		L	1,529(43.3)	1,398(39.6)
Fan	Type		Propeller	
	Motor Output	W	53	
Running Current (Rated)		A	11.15	12.23
Power Consumption (Rated)		W	2,555	2,805
Power Factor		%	99.7	99.7
Dimensions (H×W×D)		in (mm)	28-15/16 × 32-1/2 × 11-13/16" (733.4 x 825.5 x 298.4 mm)	
Packaged Dimensions (H×W×D)		in (mm)	31-7/16 × 37-15/16 × 15-3/8" (800.1 x 962 x 393.7 mm)	
Weight		Lbs/kg	121.0 lbs / 54.9 kg	
Gross Weight		Lbs/kg	137.0 lbs / 62.1 kg	
Operation Sound	H / L	dBA	54 / —	54 / —
Drawing No.			3D056383	

Note: ■ The data are based on the conditions shown in the table below.

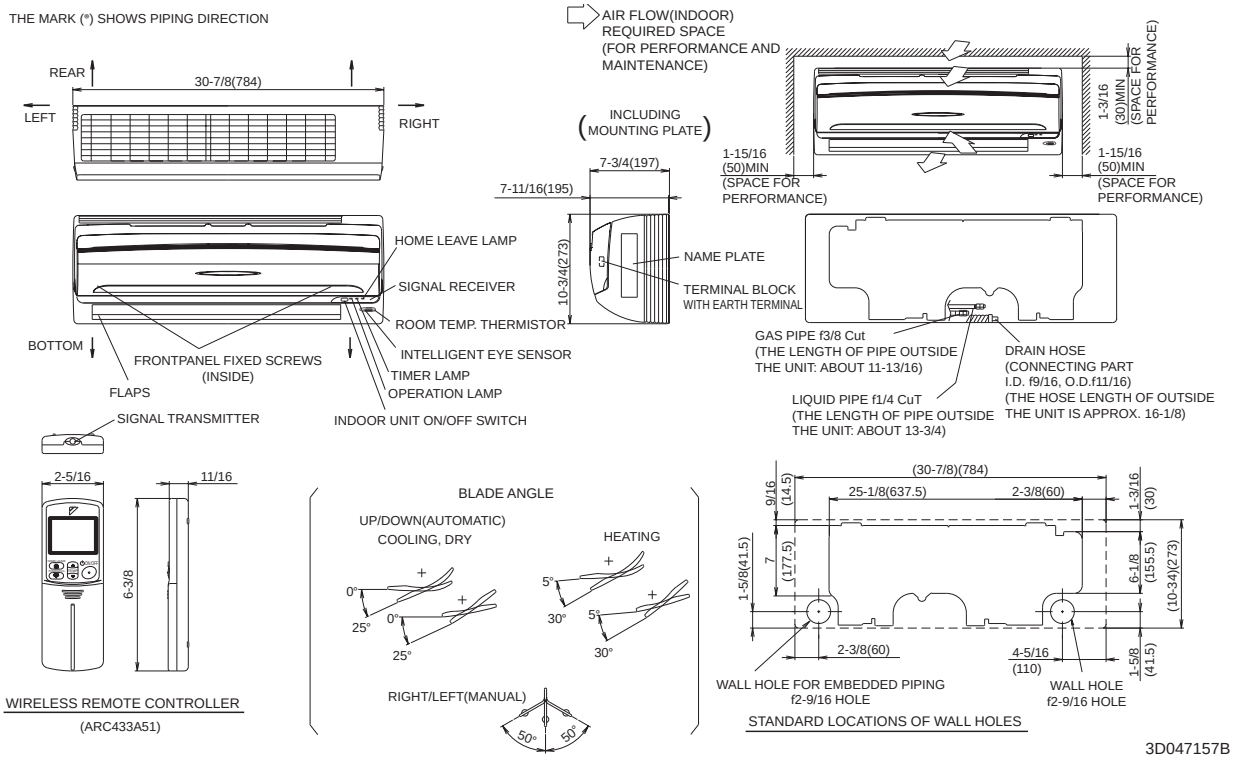
Cooling	Heating	Piping Length
Indoor ; 80°FDB/67°FWB Outdoor ; 95°FDB/75°FWB	Indoor ; 70°FDB/60°FWB Outdoor ; 47°FDB/43°FWB	25 ft (7.5 m)

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

4. Dimensions

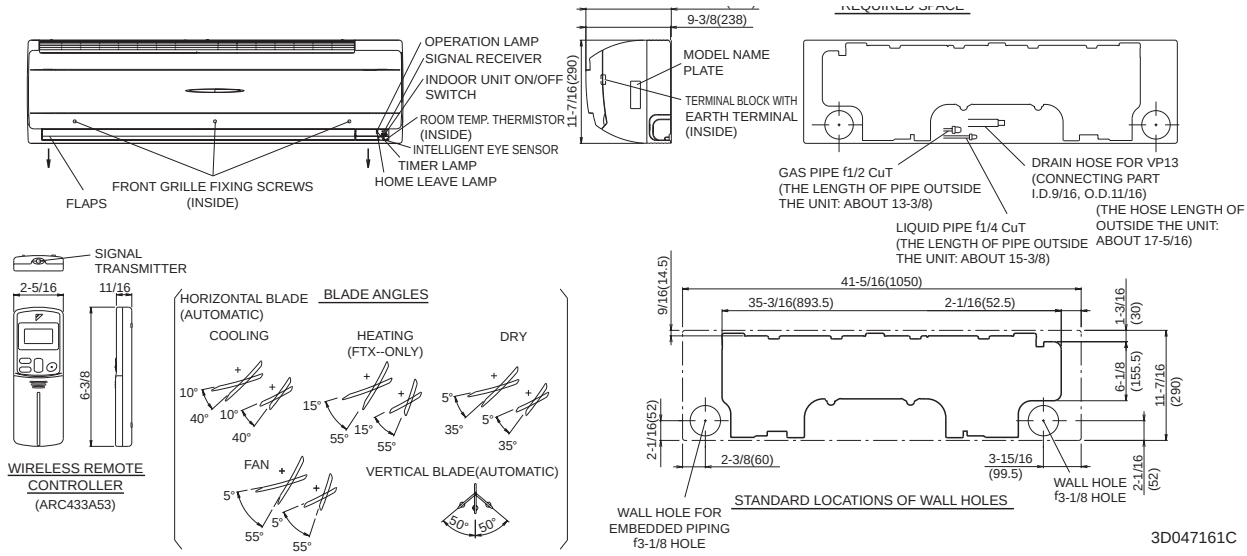
4.1 Indoor Units

FTXS09/12DVJU



3D047157B

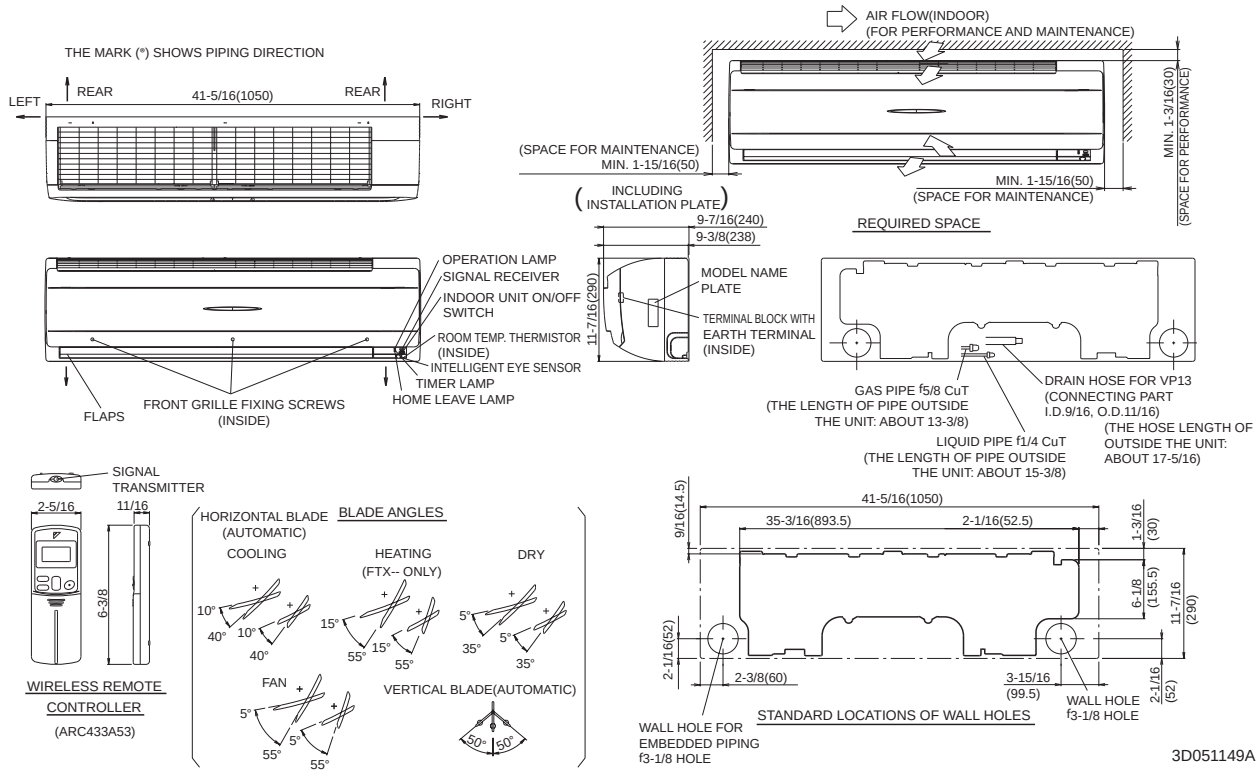
FTXS15/18DVJU



3D047161C

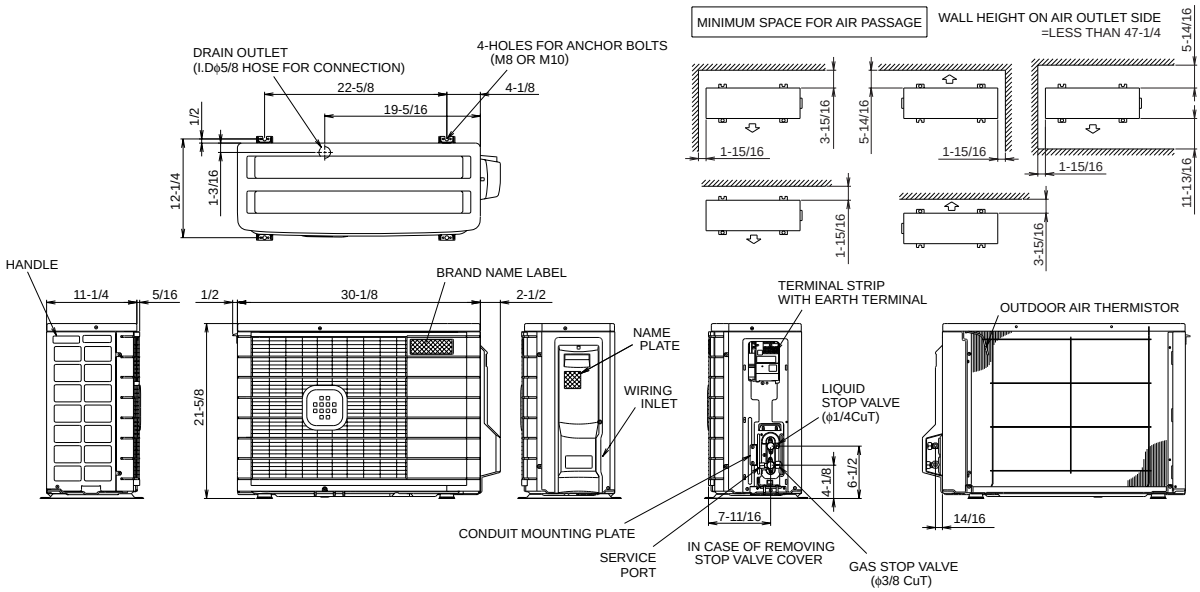
FTXS15DVJU FTXS18DVJU

FTXS24DVJU


THE MARK (*) SHOWS PIPING DIRECTION
LEFT
REAR
41-5/16(1050)
REAR
RIGHT
AIR FLOW(INDOOR)
(FOR PERFORMANCE AND MAINTENANCE)
(SPACE FOR MAINTENANCE)
MIN. 1-15/16(50)
INCLUDING
INSTALLATION PLATE
MIN. 1-15/16(50)
(SPACE FOR MAINTENANCE)
MIN. 1-3/16(30)
(SPACE FOR PERFORMANCE)
9-7/16(240)
9-3/8(238)
11-7/16(290)
REQUIRED SPACE
OPERATION LAMP
SIGNAL RECEIVER
INDOOR UNIT ON/OFF SWITCH
ROOM TEMP. THERMISTOR (INSIDE)
INTELLIGENT EYE SENSOR
TIMER LAMP
HOME LEAVE LAMP
FLAPS
FRONT GRILLE FIXING SCREWS (INSIDE)
MODEL NAME PLATE
TERMINAL BLOCK WITH EARTH TERMINAL (INSIDE)
GAS PIPE f5/8 CuT
(THE LENGTH OF PIPE OUTSIDE THE UNIT: ABOUT 13-3/8)
LIQUID PIPE f1/4 CuT
(THE LENGTH OF PIPE OUTSIDE THE UNIT: ABOUT 15-3/8)
DRAIN HOSE FOR VP13
(CONNECTING PART I.D.9/16, O.D.11/16)
(THE HOSE LENGTH OF OUTSIDE THE UNIT: ABOUT 17-5/16)
SIGNAL TRANSMITTER
2-5/16
11/16
6-3/8
WIRELESS REMOTE CONTROLLER
(ARC433A53)
HORIZONTAL BLADE (AUTOMATIC)
BLADE ANGLES
COOLING
HEATING (FTX-- ONLY)
DRY
10°
40°
10°
40°
15°
55°
15°
55°
5°
35°
5°
35°
FAN
5°
55°
5°
55°
VERTICAL BLADE(AUTOMATIC)
50°
50°
9/16(14.5)
41-5/16(1050)
35-3/16(893.5)
2-1/16(52.5)
1-3/16 (30)
6-1/8 (155.5)
11-7/16 (290)
2-1/16(52)
2-3/8(60)
3-15/16 (99.5)
2-1/16 (52)
WALL HOLE f3-1/8 HOLE
STANDARD LOCATIONS OF WALL HOLES
WALL HOLE FOR EMBEDDED PIPING f3-1/8 HOLE
3D051149A

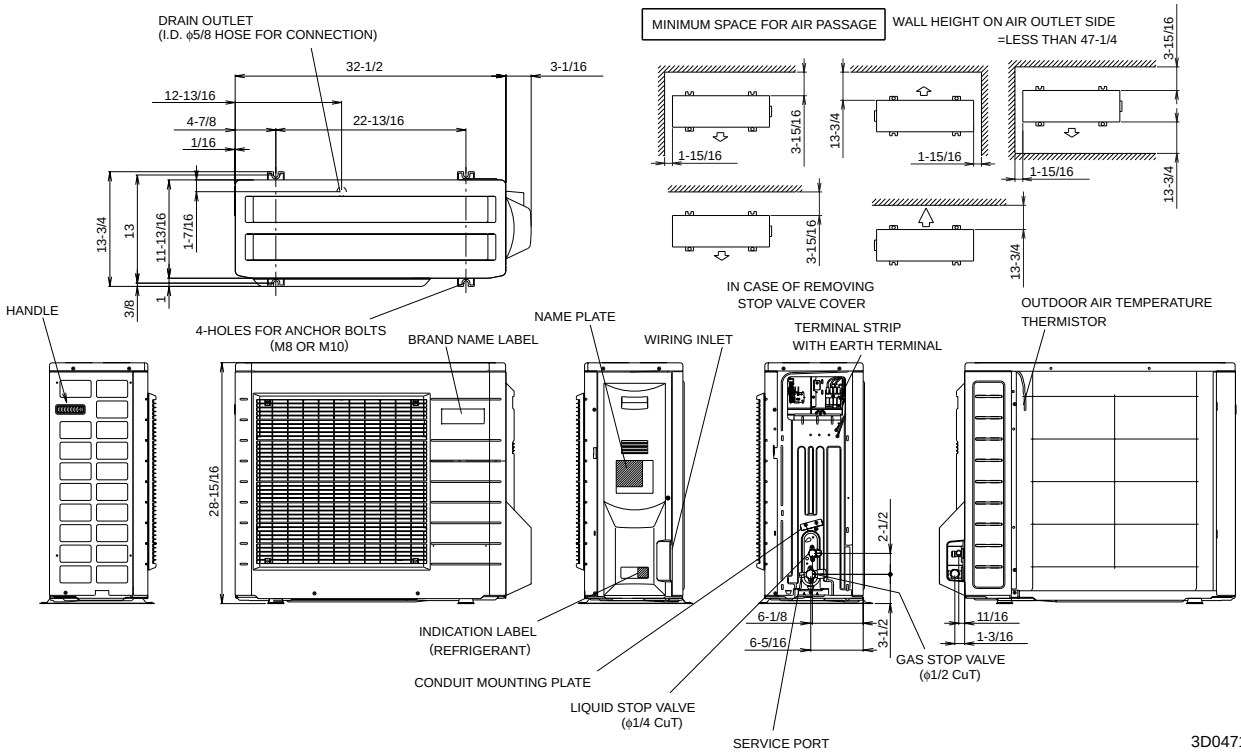
4.2 Outdoor Units

RX09/12FVJU



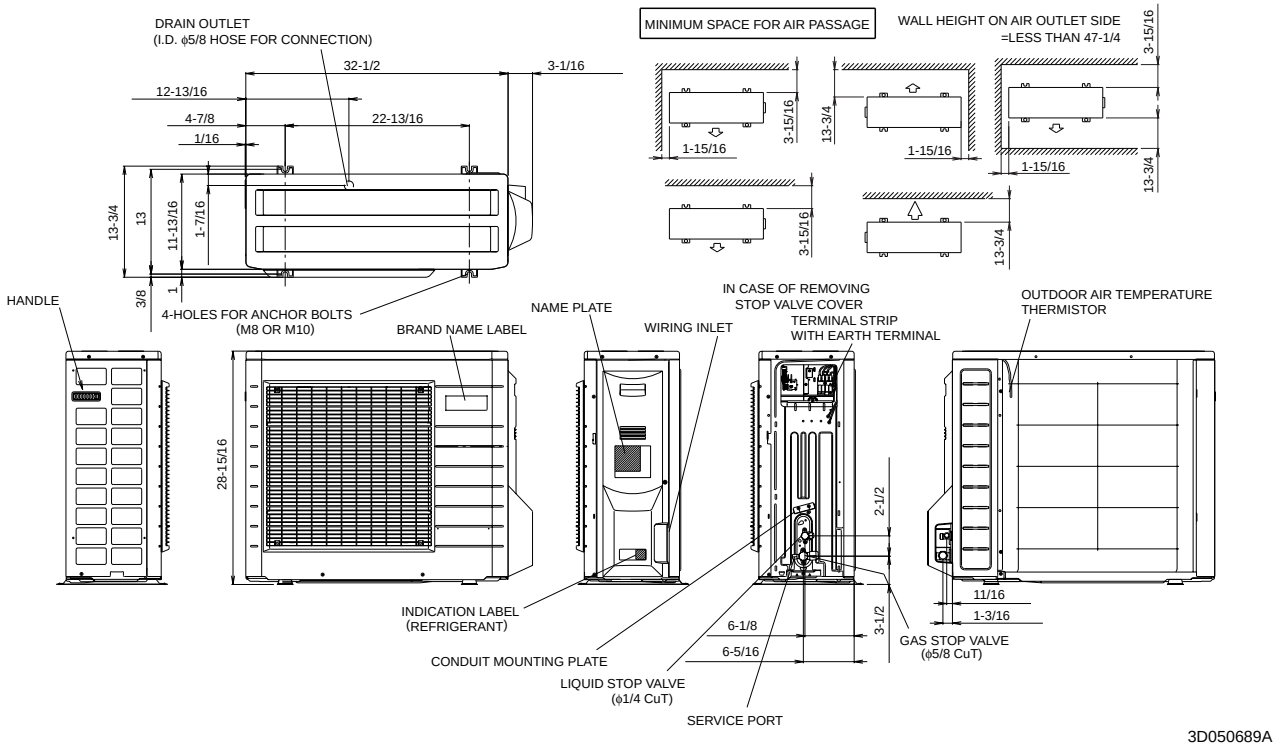
3D047139A

RX15/18FVJU



3D047140B

RX24FVJU

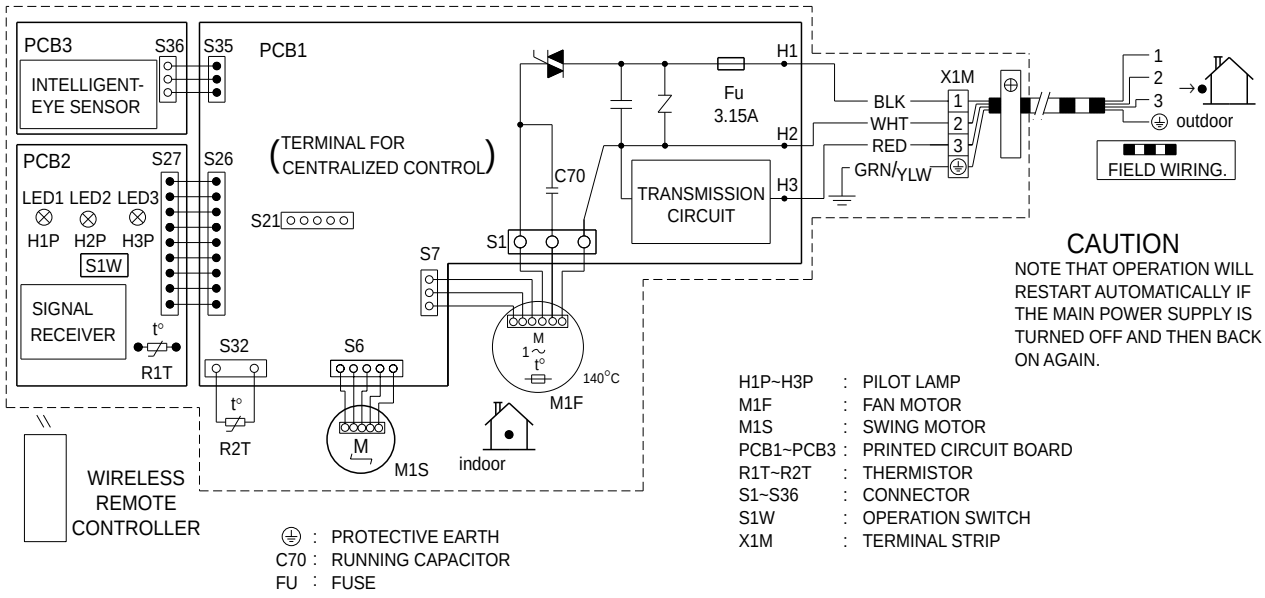


3D050689A

5. Wiring Diagrams

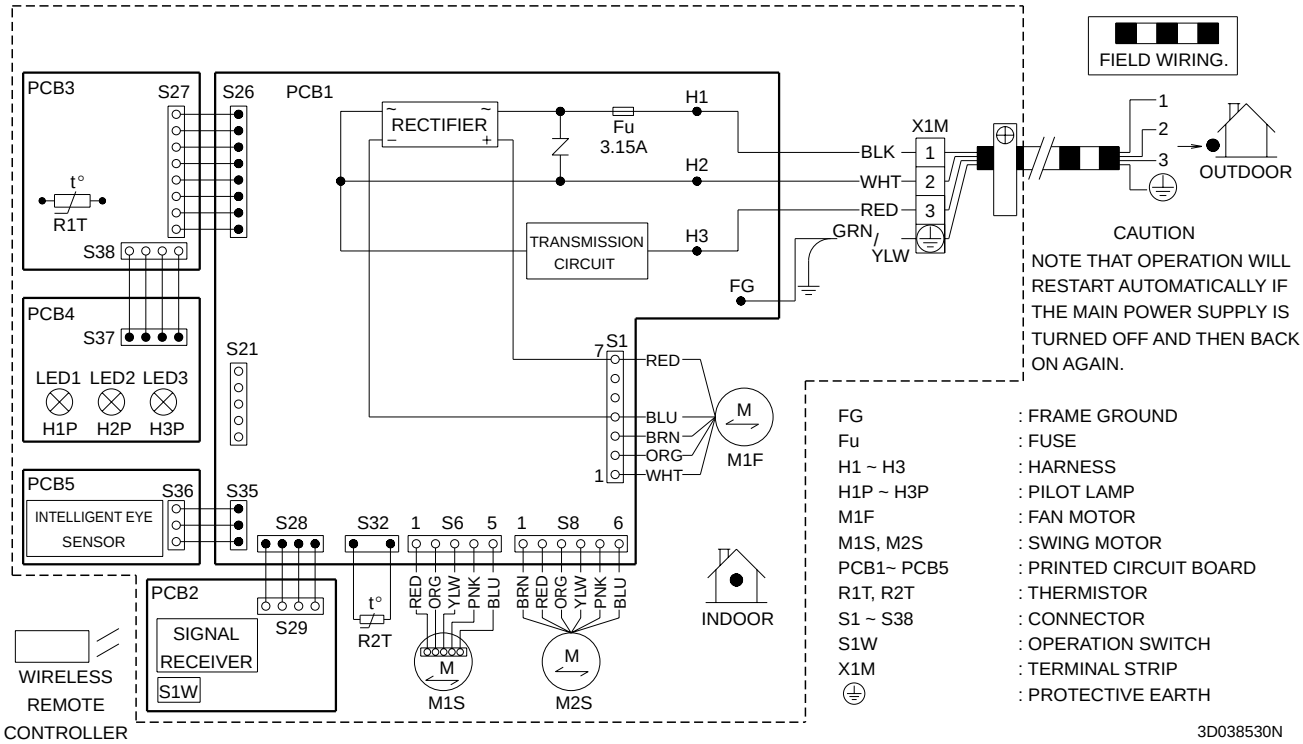
5.1 Indoor Units

FTXS09/12DVJU



3D033599G

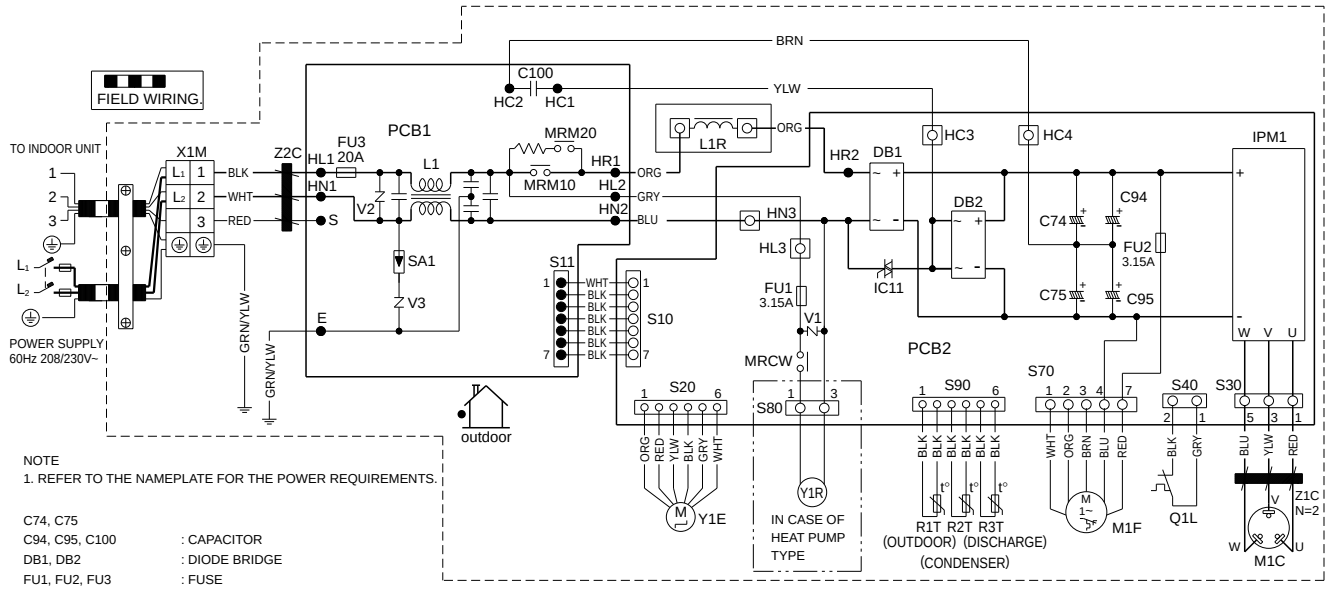
FTXS15/18/24DVJU



3D038530N

5.2 Outdoor Units

RX09/12FVJU

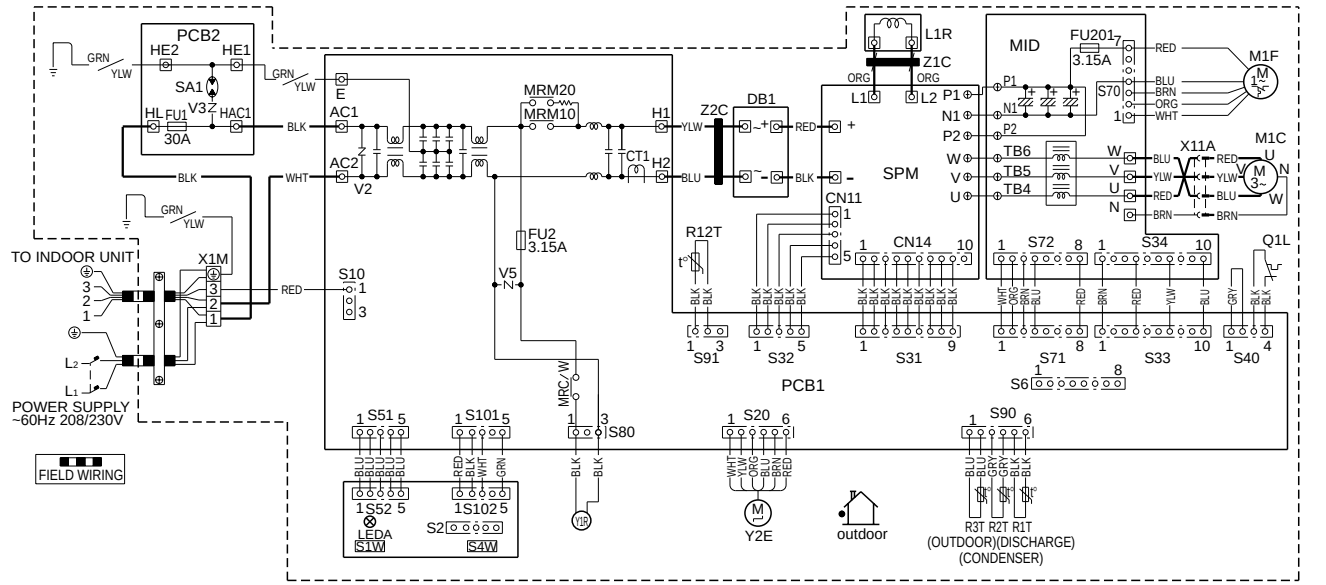


NOTE
1. REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

C74, C75					
C94, C95, C100	: CAPACITOR				
DB1, DB2	: DIODE BRIDGE				
FU1, FU2, FU3	: FUSE				
IC11	: TRIAC	PCB1, PCB2	: PRINTED CIRCUIT BOARD	SA1	: SURGE ARRESTER
IPM1	: INTELLIGENT POWER MODULE	Q1L	: OVERLOAD PROTECTOR	V1, V2, V3	: VARISTOR
L_1,L_2	: LIVE	R1T, R2T, R3T	: THERMISTOR	X1M	: TERMINAL STRIP
L1	: COIL	S10, S11, S20		Y1E	: ELECTRONIC EXPANSION VALVE COIL
L1R	: REACTOR	S30, S40, S70		Y1R	: REVERSING SOLENOIDE VALVE COIL
M1C	: COMPRESSOR MOTOR	S80, S90, S91		Z1C, Z2C	: FERRITE CORE
M1F	: FAN MOTOR	HC3, HC4, HL3, HN3	: CONNECTOR	⏚	: PROTECTIVE EARTH
MRCW, MRM10, MRM20	: MAGNETIC RELAY				

3D046979B

RX15/18/24FVJU



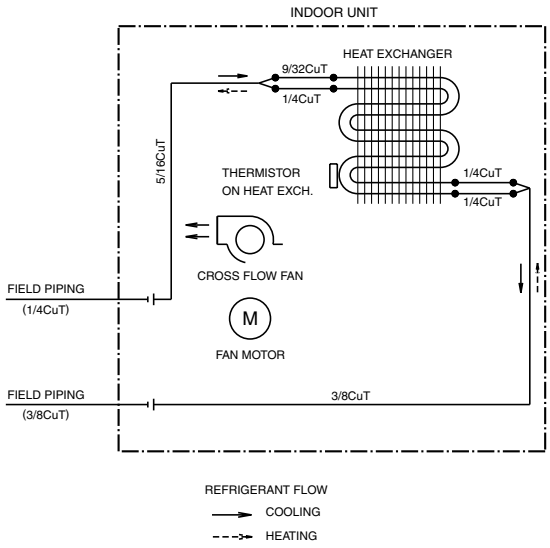
Z1C, Z2C	: FERRITE CORE	S2~S102	: CONNECTOR	L1R	: REACTOR
X1M	: TERMINAL STRIP	LEDA	: PILOT LAMP	Q1L	: OVERLOAD PROTECTOR
Y2E	: ELECTRONIC EXPANSION VALVE	PCB1, PCB2	: PRINTED CIRCUIT BOARD	CT1	: CURRENT TRANSFORMER
V2~V5	: VARISTOR	L_1, L_2	: LIVE	MID	: MOLDED INTER CONNECT DEVICE
FU1, FU2, FU201	: FUSE			SPM	: SYSTEM POWER MODULE
HE1, HE2, HAC1		S1W	: FORCED OPERATION ON/OFF SW (SW1)		
E, AC1, AC2		S4W	: LOCAL SETTING SW (SW4)		
H1, H2, HL		SA1	: SURGE ARRESTER		
L1, L2, X11A	: CONNECTOR	Y1R	: REVERSING SOLENOID VALVE COIL		
MRM10, MRM20		DB1	: DIODE BRIDGE		
MRC/W	: MAGNETIC RELAY	M1C	: COMPRESSOR MOTOR		
R1T~R3T	: THERMISTOR	M1F	: FAN MOTOR		

3D046978A

6. Piping Diagrams

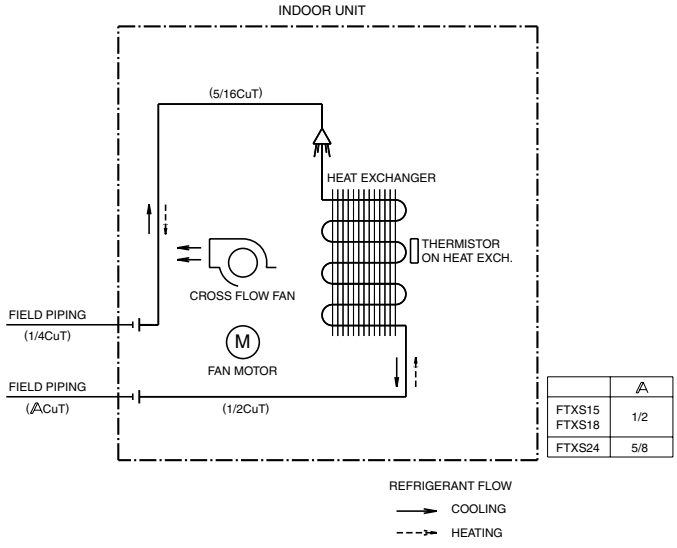
6.1 Indoor Units

FTXS09/12DVJU



4D047158

FTXS15/18/24DVJU

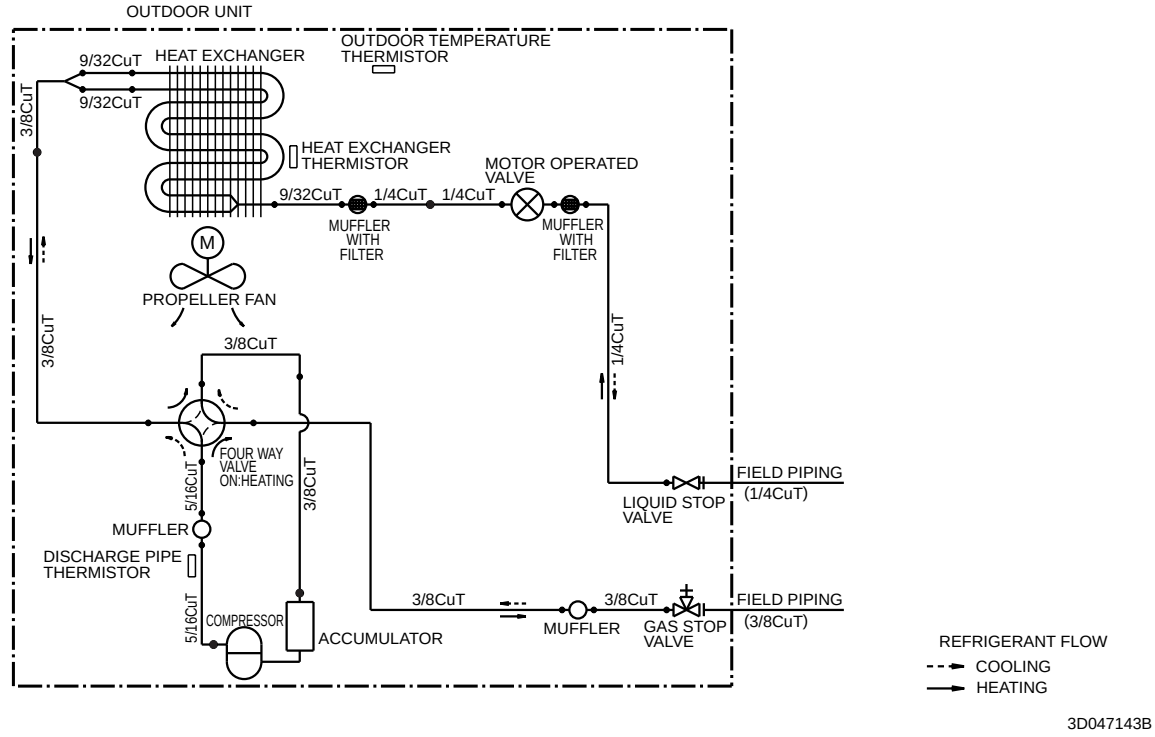


	A
FTXS15 FTXS18	1/2
FTXS24	5/8

4D047162

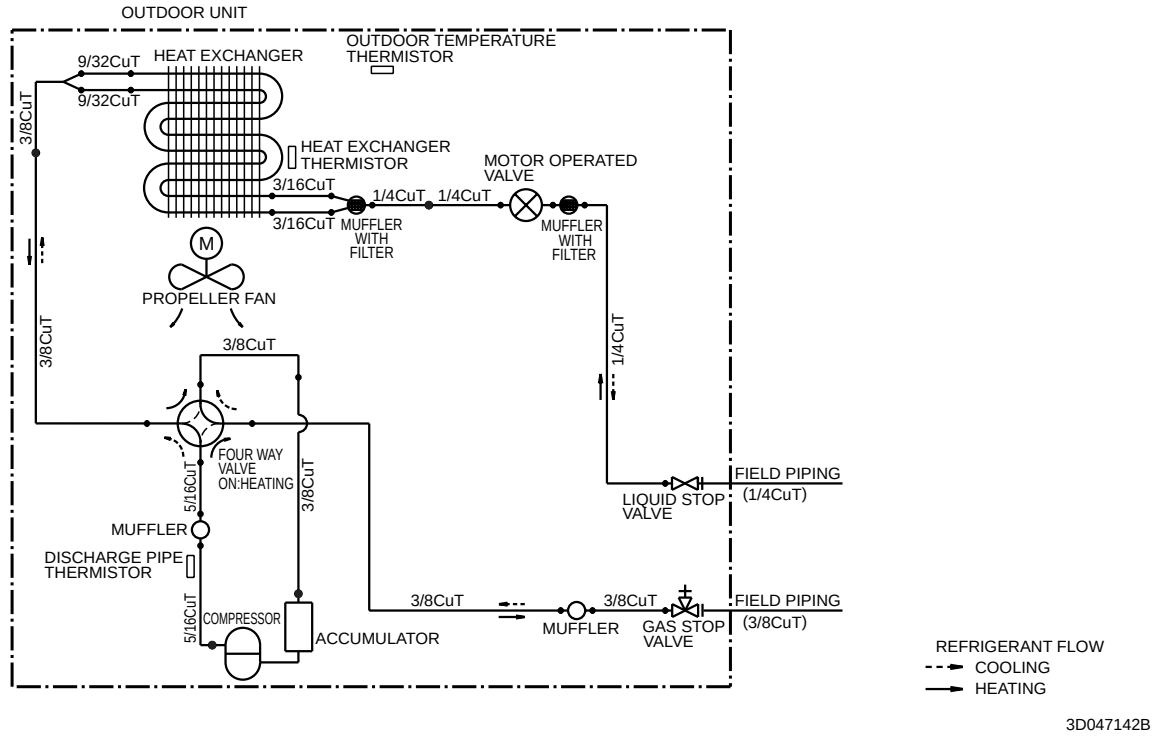
6.2 Outdoor Units

RX09FVJU



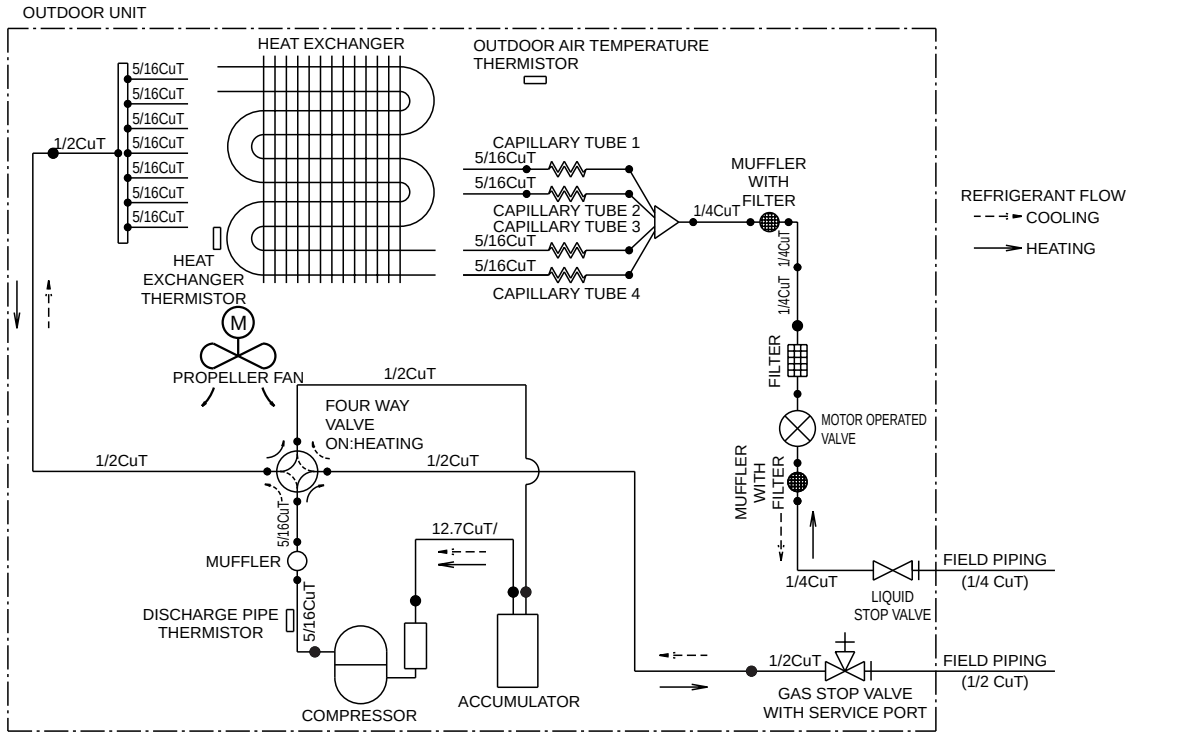
3D047143B

RX12FVJU



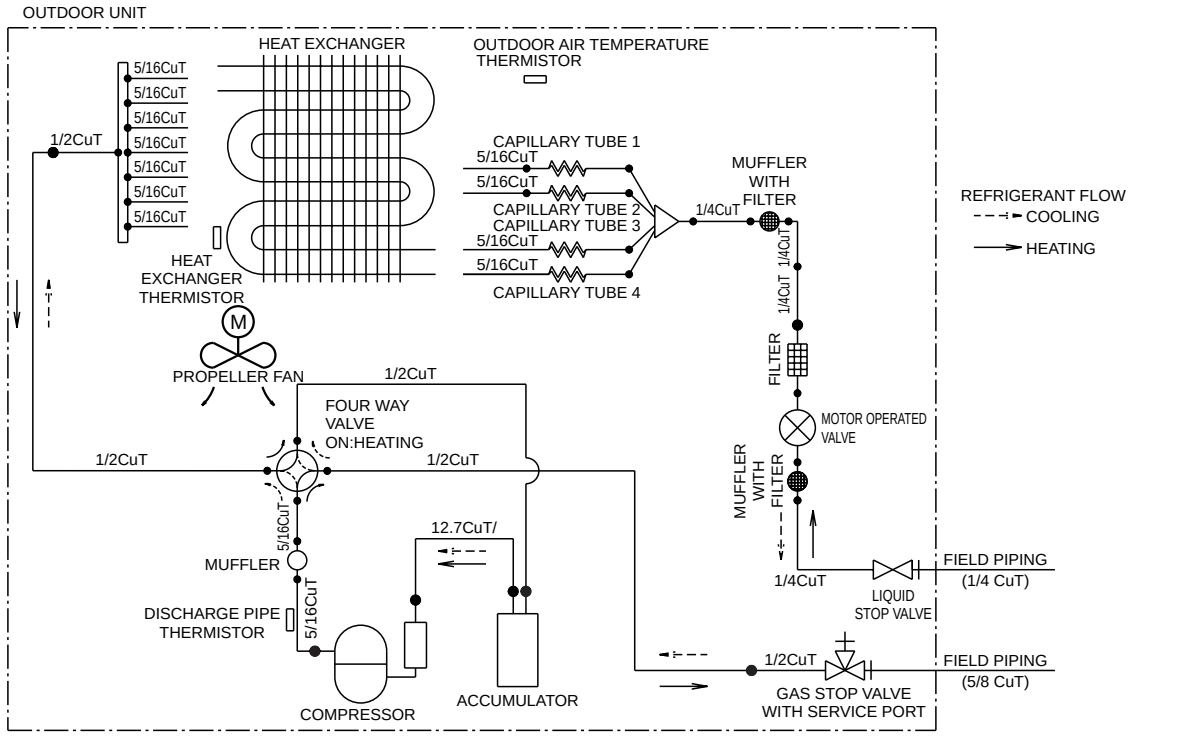
3D047142B

RX15/18FVJU



3D047141B

RX24FVJU



3D050325A

7. Capacity Tables

FTXS09DVJU + RX09FVJU (60Hz 208/230V)

Cooling

INDOOR		OUTDOOR TEMPERATURE(°FDB)																	
EWB	EDB	68.0			77.0			86.0			89.6			95.0			104.0		
°F	°F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	8.67	5.68	0.71	8.27	5.46	0.76	7.88	5.24	0.81	7.72	5.14	0.83	7.48	5.01	0.86	7.08	4.79	0.92
60.8	71.6	9.13	5.87	0.71	8.73	5.65	0.76	8.33	5.43	0.81	8.18	5.34	0.83	7.94	5.21	0.86	7.54	4.99	0.91
64.4	77.0	9.52	6.02	0.70	9.13	5.81	0.75	8.73	5.59	0.80	8.57	5.52	0.83	8.33	5.38	0.86	7.93	5.16	0.91
67.0	80.0	9.72	6.10	0.70	9.32	5.89	0.75	8.92	5.67	0.80	8.77	5.58	0.82	8.50	5.44	0.85	8.13	5.24	0.91
71.6	86.0	10.31	6.33	0.70	9.91	6.12	0.75	9.51	5.91	0.80	9.35	5.82	0.82	9.12	5.69	0.85	8.72	5.48	0.90
75.2	89.6	10.70	6.46	0.69	10.30	6.27	0.74	9.91	6.06	0.79	9.75	5.97	0.81	9.51	5.85	0.84	9.11	5.64	0.89

Heating

INDOOR	OUTDOOR TEMPERATURE(°FWB)									
EDB	14.0		23.0		32.0		43.0		50.0	
°F	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
60.8	6.20	0.97	7.51	1.01	8.83	1.05	10.40	1.10	11.45	1.13
64.4	6.04	0.98	7.35	1.02	8.67	1.06	10.24	1.10	11.29	1.13
68.0	5.88	0.99	7.19	1.03	8.51	1.07	10.08	1.11	11.13	1.14
70.0	5.80	0.99	7.11	1.03	8.43	1.07	10.00	1.12	11.05	1.15
71.6	5.72	1.00	7.03	1.04	8.34	1.07	9.92	1.12	10.97	1.15
75.2	5.56	1.01	6.87	1.04	8.18	1.08	9.76	1.13	10.81	1.16

Symbols

EWB	: Entering wet bulb temp.	(°F)
EDB	: Entering dry bulb temp.	(°F)
TC	: Total capacity	(kBtu/h)
SHC	: Sensible heating capacity	(kBtu/h)
PI	: Power input	(kW)

Note:

1. Ratings shown are net capacities which include a deduction for indoor fan motor heat.
2. shows nominal (rated) capacities and power input.
3. TC and PI must be calculated by interpolation using the figures in the above tables. (Figures out of the tables should not be used for calculation.)
4. Capacities are based on the following conditions.
   Corresponding refrigerant piping length : 25ft
   Level difference : 0ft

3D057579

FTXS12DVJU + RX12FVJU (60Hz 208/230V)

Cooling

INDOOR		OUTDOOR TEMPERATURE(°FDB)																	
EWB	EDB	68.0			77.0			86.0			89.6			95.0			104.0		
°F	°F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	13.03	8.54	1.09	12.49	8.31	1.17	11.95	7.95	1.25	11.74	7.83	1.28	11.42	7.65	1.33	10.88	7.35	1.41
60.8	71.6	13.09	8.41	1.10	12.55	8.18	1.18	12.01	7.83	1.26	11.79	7.71	1.29	11.47	7.53	1.34	10.93	7.23	1.42
64.4	77.0	13.16	8.33	1.11	12.63	8.09	1.19	12.09	7.75	1.27	11.87	7.64	1.30	11.07	7.14	1.35	11.01	7.15	1.43
67.0	80.0	13.12	8.24	1.11	12.58	8.00	1.19	12.04	7.65	1.27	11.82	7.53	1.30	11.50	7.36	1.35	10.96	7.06	1.43
71.6	86.0	13.30	8.16	1.12	12.76	7.92	1.20	12.22	7.58	1.28	12.00	7.46	1.31	11.68	7.29	1.36	11.14	7.00	1.44
75.2	89.6	13.35	8.06	1.12	12.81	7.84	1.20	12.27	7.51	1.28	12.06	7.39	1.31	11.50	7.07	1.36	11.19	6.92	1.44

Heating

INDOOR	OUTDOOR TEMPERATURE(°FWB)									
EDB	14.0		23.0		32.0		43.0		50.0	
°F	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
60.8	6.65	0.92	8.19	0.97	9.73	1.02	11.58	1.07	12.82	1.11
64.4	6.61	0.93	8.15	0.98	9.70	1.03	11.55	1.08	12.78	1.12
68.0	6.58	0.94	8.12	0.99	9.66	1.04	11.52	1.09	12.75	1.13
70.0	6.56	0.95	8.10	0.99	9.65	1.04	11.50	1.10	12.73	1.14
71.6	6.54	0.95	8.09	1.00	9.63	1.05	11.48	1.10	12.71	1.14
75.2	6.51	0.96	8.05	1.01	9.59	1.06	11.45	1.11	12.68	1.15

Symbols

EWB	: Entering wet bulb temp.	(°F)
EDB	: Entering dry bulb temp.	(°F)
TC	: Total capacity	(kBtu/h)
SHC	: Sensible heating capacity	(kBtu/h)
PI	: Power input	(kW)

Note:

1. Ratings shown are net capacities which include a deduction for indoor fan motor heat.
2. shows nominal (rated) capacities and power input.
3. TC and PI must be calculated by interpolation using the figures in the above tables. (Figures out of the tables should not be used for calculation.)
4. Capacities are based on the following conditions.
   Corresponding refrigerant piping length : 25ft
   Level difference : 0ft

3D057580

FTSX15DVJU + RX15FVJU (60Hz 208/230V)

Cooling

INDOOR		OUTDOOR TEMPERATURE(°FDB)																	
EWB	EDB	68.0			77.0			86.0			89.6			95.0			104.0		
°F	°F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	15.05	9.86	1.00	14.54	9.67	1.09	14.02	9.33	1.19	13.82	9.21	1.22	13.51	9.06	1.28	13.00	8.79	1.38
60.8	71.6	15.47	9.95	1.02	14.96	9.75	1.11	14.45	9.42	1.21	14.24	9.31	1.25	13.94	9.15	1.30	13.43	8.89	1.40
64.4	77.0	16.11	10.19	1.05	15.60	10.00	1.14	15.09	9.67	1.24	14.88	9.58	1.28	14.58	9.40	1.33	14.06	9.14	1.43
67.0	80.0	16.54	10.38	1.07	16.02	10.19	1.17	15.51	9.86	1.26	15.31	9.75	1.30	15.00	9.60	1.36	14.49	9.34	1.45
71.6	86.0	17.17	10.54	1.10	16.66	10.34	1.20	16.15	10.02	1.29	15.94	9.92	1.33	15.64	9.76	1.39	15.13	9.50	1.48
75.2	89.6	17.60	10.62	1.12	17.09	10.45	1.22	16.57	10.14	1.31	16.37	10.03	1.35	16.06	9.88	1.41	15.55	9.62	1.50

Heating

INDOOR	OUTDOOR TEMPERATURE(°FWB)									
EDB	14.0		23.0		32.0		43.0		50.0	
°F	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
60.8	8.42	1.22	11.32	1.32	14.22	1.42	17.70	1.54	20.02	1.62
64.4	8.54	1.30	11.44	1.40	14.34	1.50	17.82	1.62	20.14	1.70
68.0	8.66	1.37	11.56	1.47	14.46	1.57	17.94	1.69	20.26	1.77
70.0	8.72	1.41	11.62	1.51	14.52	1.61	18.00	1.73	20.32	1.81
71.6	8.78	1.45	11.68	1.55	14.58	1.65	18.06	1.77	20.38	1.85
75.2	8.90	1.52	11.80	1.62	14.70	1.72	18.18	1.84	20.50	1.93

Symbols

EWB	: Entering wet bulb temp.	(°F)
EDB	: Entering dry bulb temp.	(°F)
TC	: Total capacity	(kBtu/h)
SHC	: Sensible heating capacity	(kBtu/h)
PI	: Power input	(kW)

Note:

1. Ratings shown are net capacities which include a deduction for indoor fan motor heat.
2. shows nominal (rated) capacities and power input.
3. TC and PI must be calculated by interpolation using the figures in the above tables. (Figures out of the tables should not be used for calculation.)
4. Capacities are based on the following conditions.
   Corresponding refrigerant piping length : 25ft
   Level difference : 0ft

3D057581

FTXS18DVJU + RX18FVJU (60Hz 208/230V)

Cooling

INDOOR		OUTDOOR TEMPERATURE(°FDB)																	
EWB	EDB	68.0			77.0			86.0			89.6			95.0			104.0		
°F	°F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	18.05	11.82	1.39	17.54	11.66	1.49	17.02	11.32	1.58	16.82	11.21	1.62	16.51	11.07	1.68	16.00	10.81	1.77
60.8	71.6	18.47	11.88	1.41	17.96	11.71	1.51	17.45	11.38	1.60	17.24	11.27	1.64	16.94	11.13	1.70	16.43	10.87	1.79
64.4	77.0	19.11	12.09	1.44	18.60	11.92	1.54	18.09	11.59	1.63	17.88	11.51	1.67	17.58	11.34	1.73	17.06	11.09	1.82
67.0	80.0	19.54	12.27	1.47	19.02	12.09	1.56	18.51	11.77	1.66	18.31	11.66	1.69	18.00	11.52	1.75	17.49	11.27	1.85
71.6	86.0	20.17	12.38	1.50	19.66	12.20	1.59	19.15	11.89	1.69	18.94	11.78	1.72	18.64	11.64	1.78	18.13	11.39	1.88
75.2	89.6	20.60	12.43	1.52	20.09	12.29	1.61	19.57	11.97	1.71	19.37	11.87	1.75	19.06	11.72	1.80	18.55	11.48	1.90

Heating

INDOOR	OUTDOOR TEMPERATURE(°FWB)									
EDB	14.0		23.0		32.0		43.0		50.0	
°F	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
60.8	12.02	1.69	14.92	1.79	17.82	1.89	21.30	2.01	23.62	1.89
64.4	12.14	1.77	15.04	1.87	17.94	1.97	21.42	2.09	23.74	1.97
68.0	12.26	1.84	15.16	1.94	18.06	2.04	21.54	2.16	23.86	2.04
70.0	12.32	1.88	15.22	1.98	18.12	2.08	21.60	2.20	23.92	2.08
71.6	12.38	1.92	15.28	2.02	18.18	2.12	21.66	2.24	23.98	2.12
75.2	12.50	1.99	15.40	2.09	18.30	2.19	21.78	2.31	24.10	2.20

Symbols

EWB	: Entering wet bulb temp.	(°F)
EDB	: Entering dry bulb temp.	(°F)
TC	: Total capacity	(kBtu/h)
SHC	: Sensible heating capacity	(kBtu/h)
PI	: Power input	(kW)

Note:

1. Ratings shown are net capacities which include a deduction for indoor fan motor heat.
2. shows nominal (rated) capacities and power input.
3. TC and PI must be calculated by interpolation using the figures in the above tables. (Figures out of the tables should not be used for calculation.)
4. Capacities are based on the following conditions.
   Corresponding refrigerant piping length : 25ft
   Level difference : 0ft

3D057582

FTXS24DVJU + RX24FVJU (60Hz 208/230V)

Cooling

INDOOR		OUTDOOR TEMPERATURE(°FDB)																	
EWB	EDB	68.0			77.0			86.0			89.6			95.0			104.0		
°F	°F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	22.05	14.16	2.24	21.54	14.32	2.33	21.02	13.98	2.43	20.82	13.88	2.46	20.51	13.75	2.52	20.00	13.52	2.62
60.8	71.6	22.47	14.45	2.26	21.96	14.32	2.35	21.45	13.99	2.45	21.24	13.89	2.49	20.94	13.75	2.54	20.43	13.52	2.64
64.4	77.0	23.11	14.62	2.29	22.60	14.48	2.38	22.09	14.15	2.48	21.88	14.09	2.52	21.58	13.92	2.57	21.06	13.69	2.67
67.0	80.0	23.54	14.78	2.31	23.02	14.64	2.41	22.51	14.31	2.50	22.31	14.21	2.54	22.00	14.08	2.60	21.49	13.85	2.69
71.6	86.0	24.17	14.84	2.34	23.66	14.69	2.44	23.15	14.37	2.53	22.94	14.27	2.57	22.64	14.14	2.63	22.13	13.90	2.72
75.2	89.6	24.60	14.85	2.36	24.09	14.73	2.46	23.57	14.42	2.55	23.37	14.32	2.59	23.06	14.18	2.65	22.55	13.95	2.74

Heating

INDOOR	OUTDOOR TEMPERATURE(°FWB)									
EDB	14.0		23.0		32.0		43.0		50.0	
°F	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
60.8	14.42	2.34	17.32	2.44	20.22	2.54	23.70	2.66	26.02	2.74
64.4	14.54	2.42	17.44	2.52	20.34	2.62	23.82	2.74	26.14	2.82
68.0	14.66	2.49	17.56	2.59	20.46	2.69	23.94	2.81	26.26	2.89
70.0	14.72	2.53	17.62	2.63	20.52	2.73	24.00	2.85	26.32	2.93
71.6	14.78	2.57	17.68	2.67	20.58	2.77	24.06	2.89	26.38	2.97
75.2	14.90	2.64	17.80	2.74	20.70	2.84	24.18	2.96	26.50	3.05

Symbols

EWB	: Entering wet bulb temp.	(°F)
EDB	: Entering dry bulb temp.	(°F)
TC	: Total capacity	(kBtu/h)
SHC	: Sensible heating capacity	(kBtu/h)
PI	: Power input	(kW)

Note:

1. Ratings shown are net capacities which include a deduction for indoor fan motor heat.
2. shows nominal (rated) capacities and power input.
3. TC and PI must be calculated by interpolation using the figures in the above tables. (Figures out of the tables should not be used for calculation.)
4. Capacities are based on the following conditions.
   Corresponding refrigerant piping length : 25ft
   Level difference : 0ft

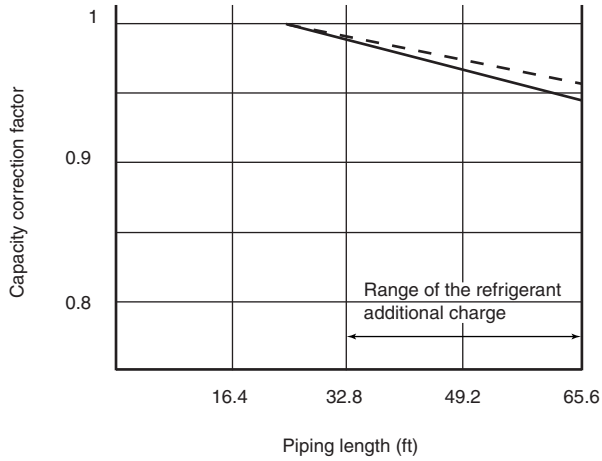
3D057583

7.1 Capacity correction factor by the length of refrigerant piping (Reference)

The cooling and the heating capacity of the unit has to be corrected in accordance with the length of refrigerant piping. (The distance between the indoor unit and the outdoor unit)

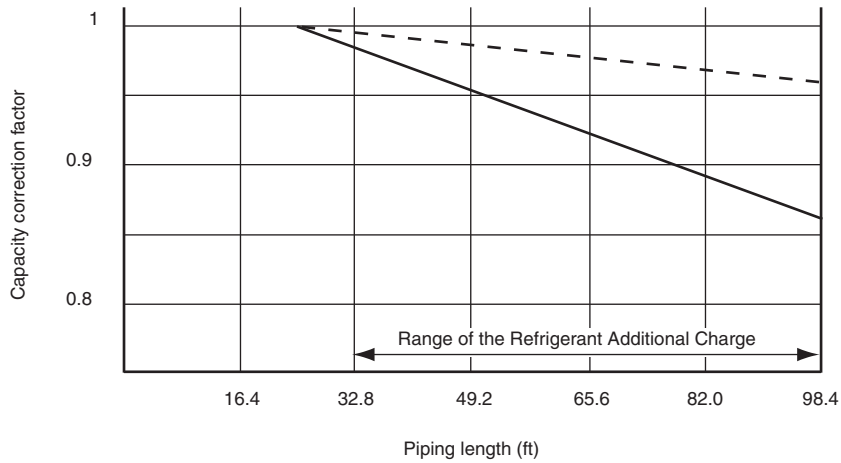
<— line : cooling capacity>
<--- line : heating capacity>

R-410A (09/12 class)



(R4980)

R-410A (15/18/24 class)

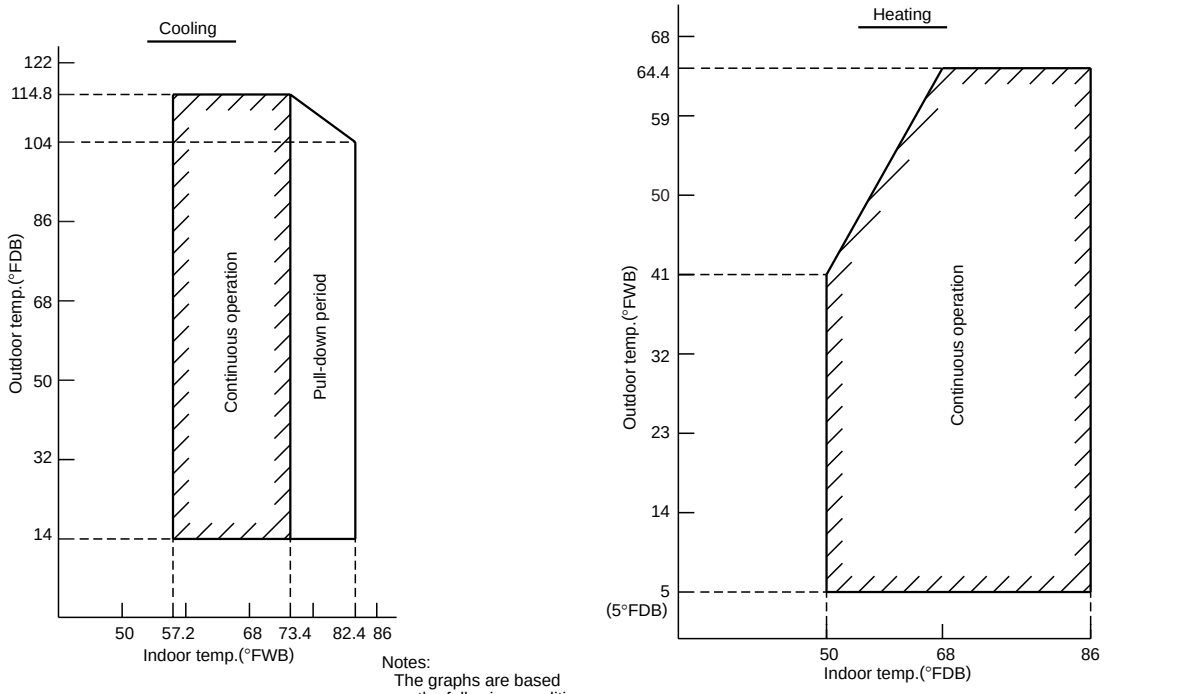


(R4981)

Note: The graphs show the factor when additional refrigerant of the proper quantity is charged.

8. Operation Limit

RX09/12/15/18/24FVJU



Notes:
The graphs are based on the following conditions.
- Equivalent piping length 25ft
- Level difference 0ft
- Air flow rate High

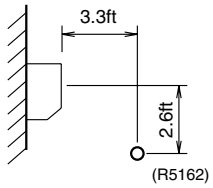
3D047649B

9. Sound Level

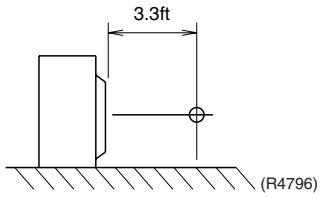
9.1 Measuring Location

Indoor Unit

The Single Split Duct-Free System



Outdoor Unit



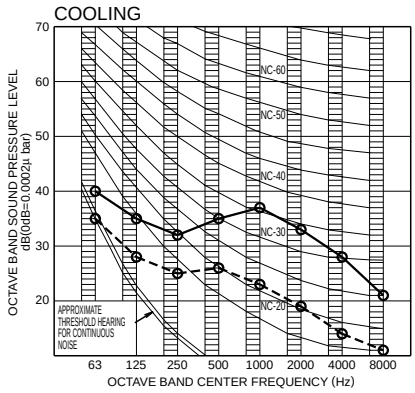
Note: 1. Operation sound is measured in an anechoic chamber.
2. The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 80°FDB/67°FWB Outdoor ; 95°FDB/75°FWB	Indoor ; 70°FDB/60°FWB Outdoor ; 47°FDB/43°FWB	25ft

9.2 Octave Band Level

9.2.1 Indoor Units

FTXS09DVJU



OVER ALL (dB)

SCALE	60Hz 208/230V (H)	60Hz 208/230V (L)
A	38	25

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 208/230V 60Hz

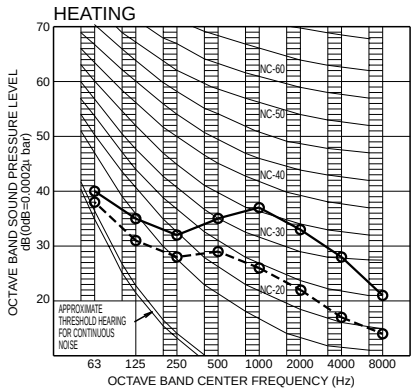
JIS STANDARD

STANDARD EXTERNAL STATIC PRESSURE

60Hz 208/230V(H)

60Hz 208/230V(L)

Cooling



OVER ALL (dB)

SCALE	60Hz 208/230V (H)	60Hz 208/230V (L)
A	38	28

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 208/230V 60Hz

JIS STANDARD

STANDARD EXTERNAL STATIC PRESSURE

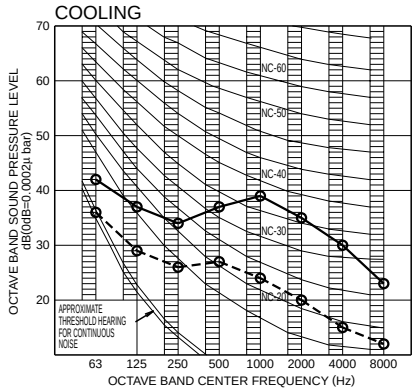
60Hz 208/230V(H)

60Hz 208/230V(L)

Heating

3D047160

FTXS12DVJU



OVER ALL (dB)

SCALE	60Hz 208/230V (H)	60Hz 208/230V (L)
A	40	26

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 208/230V 60Hz

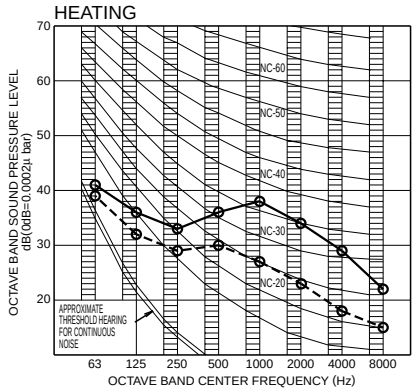
JIS STANDARD

STANDARD EXTERNAL STATIC PRESSURE

60Hz 208/230V(H)

60Hz 208/230V(L)

Cooling



OVER ALL (dB)

SCALE	60Hz 208/230V (H)	60Hz 208/230V (L)
A	39	29

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 208/230V 60Hz

JIS STANDARD

STANDARD EXTERNAL STATIC PRESSURE

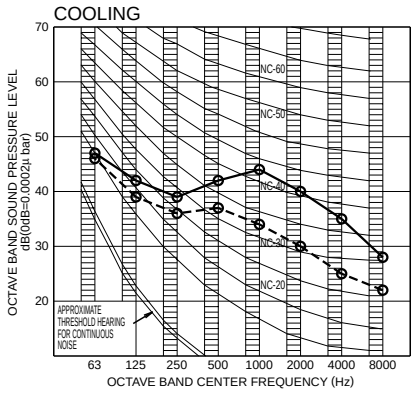
60Hz 208/230V(H)

60Hz 208/230V(L)

Heating

3D047170

FTXS15/18DVJU



OVER ALL (dB)

SCALE	60Hz 208/230V (H)	60Hz 208/230V (L)
A	45	36

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

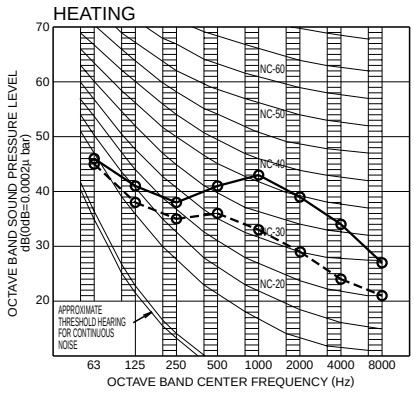
POWER SOURCE 208/230V 60Hz

JIS STANDARD

60Hz 208/230V(H)

60Hz 208/230V(L)

Cooling



OVER ALL (dB)

SCALE	60Hz 208/230V (H)	60Hz 208/230V (L)
A	44	35

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 208/230V 60Hz

JIS STANDARD

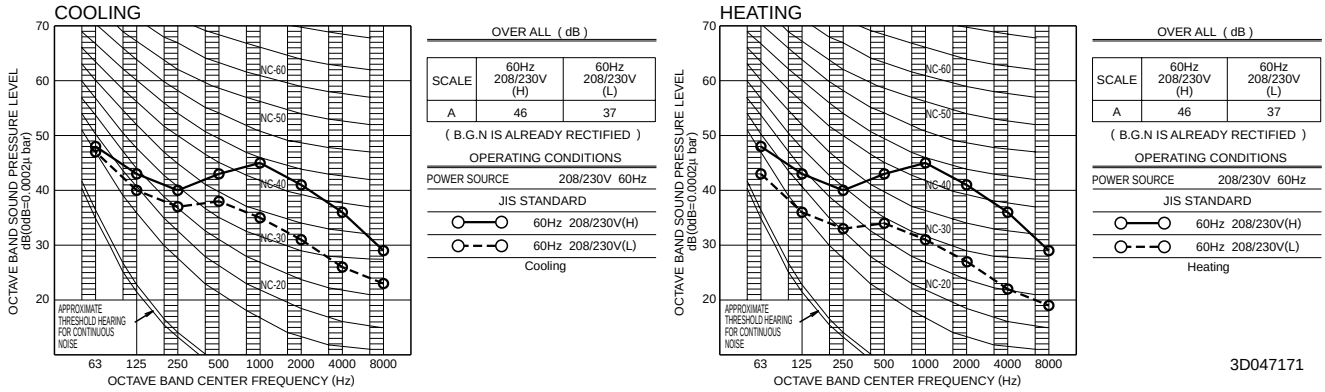
60Hz 208/230V(H)

60Hz 208/230V(L)

Heating

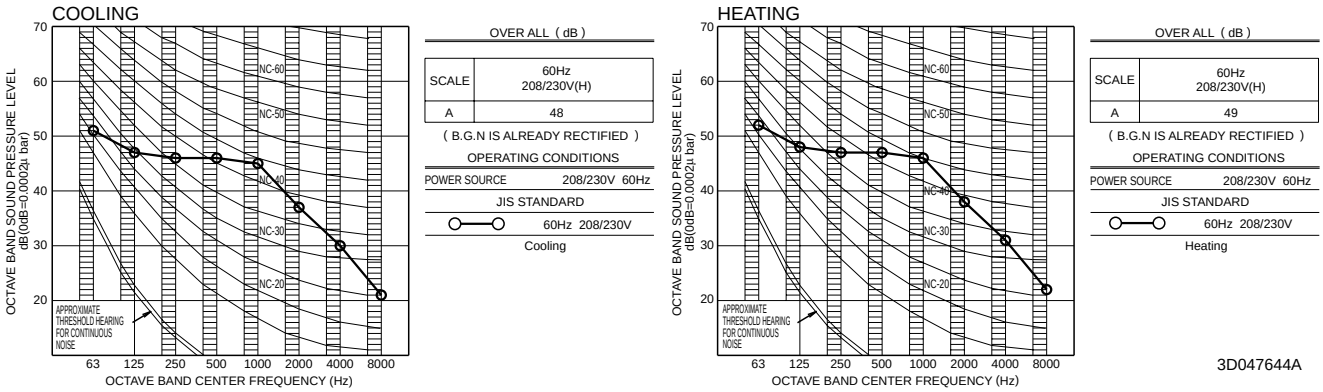
3D047167

FTXS24DVJU

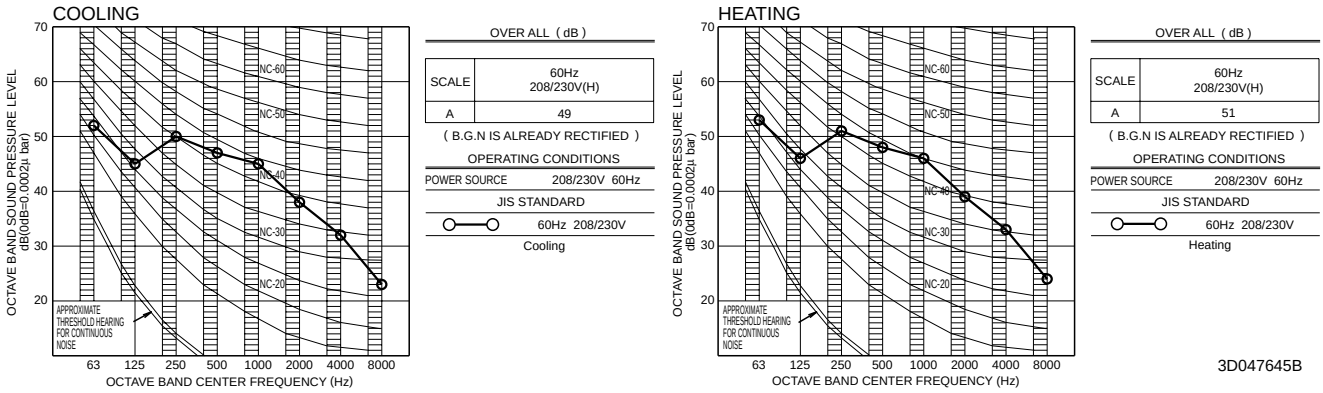

COOLING
OCTAVE BAND SOUND PRESSURE LEVEL dB(0dB=0.0002μ bar)
70
60
50
40
30
20
NC-60
NC-50
NC-40
NC-30
NC-20
APPROXIMATE THRESHOLD HEARING FOR CONTINUOUS NOISE
63 125 250 500 1000 2000 4000 8000
OCTAVE BAND CENTER FREQUENCY (Hz)
OVER ALL (dB)
SCALE | 60Hz 208/230V (H) | 60Hz 208/230V (L)
A | 46 | 37
(B.G.N IS ALREADY RECTIFIED)
OPERATING CONDITIONS
POWER SOURCE 208/230V 60Hz
JIS STANDARD
60Hz 208/230V(H)
60Hz 208/230V(L)
Cooling
HEATING
OCTAVE BAND SOUND PRESSURE LEVEL dB(0dB=0.0002μ bar)
70
60
50
40
30
20
NC-60
NC-50
NC-40
NC-30
NC-20
APPROXIMATE THRESHOLD HEARING FOR CONTINUOUS NOISE
63 125 250 500 1000 2000 4000 8000
OCTAVE BAND CENTER FREQUENCY (Hz)
OVER ALL (dB)
SCALE | 60Hz 208/230V (H) | 60Hz 208/230V (L)
A | 46 | 37
(B.G.N IS ALREADY RECTIFIED)
OPERATING CONDITIONS
POWER SOURCE 208/230V 60Hz
JIS STANDARD
60Hz 208/230V(H)
60Hz 208/230V(L)
Heating
3D047171

9.2.2 Outdoor Units

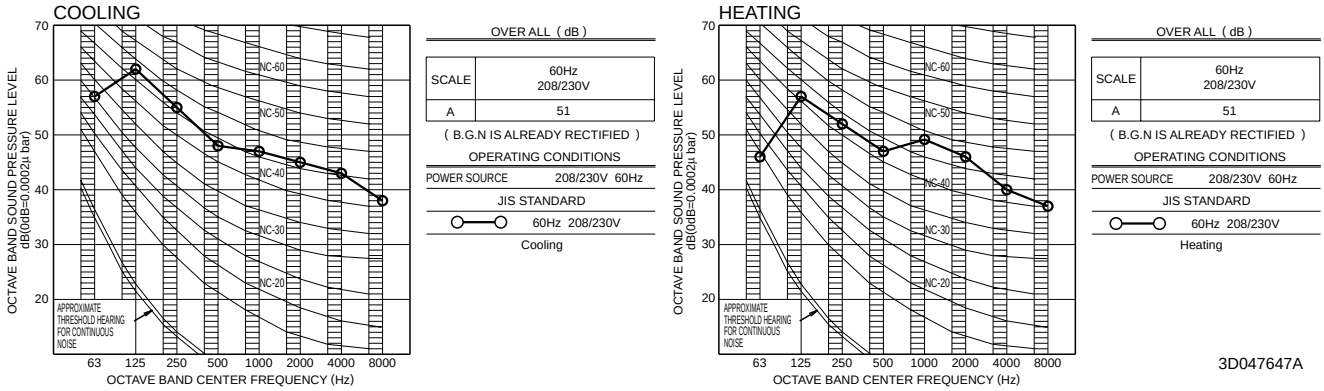
RX09FVJU



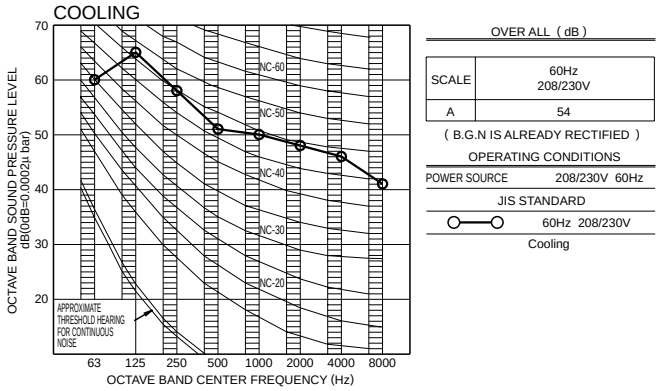
RX12FVJU



RX15/18FVJU



RX24FVJU



OVER ALL (dB)

SCALE	60Hz 208/230V
A	54

(B.G.N IS ALREADY RECTIFIED)

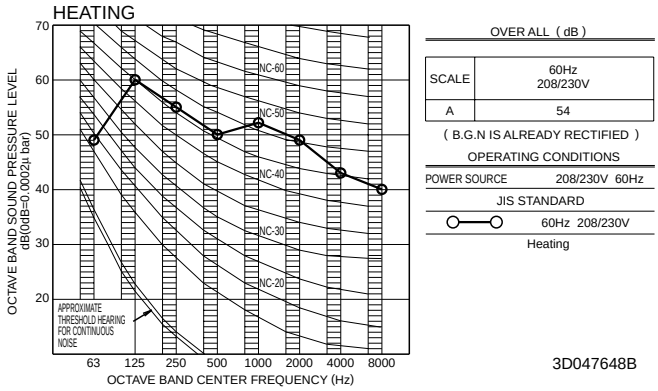
OPERATING CONDITIONS

POWER SOURCE 208/230V 60Hz

JIS STANDARD

60Hz 208/230V

Cooling



OVER ALL (dB)

SCALE	60Hz 208/230V
A	54

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 208/230V 60Hz

JIS STANDARD

60Hz 208/230V

Heating

3D047648B

10. Electric Characteristics

Representative Unit Combination		Power Supply				COMP	OFM		IFM	
Indoor Unit	Outdoor Unit	Hz-Volts	Voltage Range	MCA	MFA	RLA	W	FLA	W	FLA
FTXS09DVJU	RX09FVJU	60-208	MAX. 60Hz 253V MIN. 60Hz 187V	6.1	15	5.1	31	0.2	18	0.2
		60-230				4.6				0.18
FTXS12DVJU	RX12FVJU	60-208	MAX. 60Hz 253V MIN. 60Hz 187V	7.9	15	6.7	31	0.2	18	0.2
		60-230				6.0				0.18
FTXS15DVJU	RX15FVJU	60-208	MAX. 60Hz 253V MIN. 60Hz 187V	13.7	20	11.8	53	0.24	43	0.2
		60-230				10.7				0.18
FTXS18DVJU	RX18FVJU	60-208	MAX. 60Hz 253V MIN. 60Hz 187V	14.1	20	12.2	53	0.24	43	0.2
		60-230				11.0				0.18
FTXS24DVJU	RX24FVJU	60-208	MAX. 60Hz 253V MIN. 60Hz 187V	15.8	20	13.6	53	0.26	43	0.22
		60-230				12.3				0.2

Symbols:

MCA : MIN. CIRCUIT AMPS (A)
MFA : MAX. FUSE AMPS (A)
RLA : RATED LOAD AMPS (A)
OFM : OUTDOOR FAN MOTOR
IFM : INDOOR FAN MOTOR
FLA : FULL LOAD AMPS (A)
W : FAN MOTOR RATED OUTPUT (W)
RHz : RATED OPERATING FREQUENCY (Hz)

Note:

1. RLA is based on the following conditions.
   Indoor temp. 80°FDB/67°FWB
   Outdoor temp. 95°FDB/75°FWB
2. Maximum allowable voltage variation between phases is 2%.
3. Select wire size based on the larger value of MCA.
4. Instead of fuse, use circuit breaker.
5. Be sure to install an earth leak detector. (One that can handle higher harmonics.)
   (This unit uses an inverter, which means that it must be used an earth leak detector capable handling high harmonics in order to prevent malfunctioning of the earth leak detector itself.)

3D056378

11. Installation Manual

11.1 Indoor Units

11.1.1 Safety Precautions

Safety Precautions

- Read these Safety Precautions carefully to ensure correct installation.
- This manual classifies the precautions into WARNINGS and CAUTIONS. Be sure to follow all the precautions below: they are all important for ensuring safety.

⚠ WARNINGS	Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.
⚠ CAUTIONS	Failure to follow any of CAUTION may in some cases result in grave consequences.

- The following safety symbols are used throughout this manual:

❗	Be sure to observe this instruction.	⏚	Be sure to establish a proper earth grounding connection.	⃠	Never attempt.

- After completing installation, test the unit to check for installation errors. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual.

⚠ WARNINGS

- Installation should be left to the authorized dealer or another trained professional. Improper installation may cause water leakage, electrical shock, fire, or equipment damage.
- Install the air conditioner according to the instructions given in this manual. Incomplete installation may cause water leakage, electrical shock, fire or equipment damage.
- Be sure to use the supplied or exact specified installation parts. Use of other parts may cause the unit to come to lose, water leakage, electrical shock, fire or equipment damage.
- Install the air conditioner on a solid base that is level and can support the unit's weight.
  An inadequate base or incomplete installation may cause injury or equipment damage in the event the unit falls off the base or comes loose.
- Electrical work should be carried out in accordance with the installation manual and the national, state and local electrical wiring codes.
  Insufficient capacity or incomplete electrical work may cause electrical shock, fire or equipment damage.
- Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance. Follow all appropriate electrical codes.
- For wiring, use a wire or cable long enough to cover the entire distance with no splices if possible. Do not use an extension cord. Do not put other loads on the power supply.Use a only a separate dedicated power circuit. (Failure to do so may cause abnormal heat, electric shock,fire or equipment damage.)
- Use the specified types of wires for electrical connections between the indoor and outdoor units. Follow all state and local electrical codes.
  Firmly clamp the interconnecting wires so their terminals receive no external stresses. Incomplete connections or clamping may cause terminal overheating, fire or euipment damage.
- After connecting all wiring be sure to shape the cables so that they do not put undue stress on the electrical covers, panels or terminals.
  Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock,fire or equipment damage.
- When installing or relocating the system, be sure to keep the refrigerant circuit free from all substances other than the specified refrigerant (R410A), such as air.
  (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise which may result in rupture, resulting in injury.)
- If any refrigerant has leaked out during the installation work, ventilate the room. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)
- After all installation is complete, check to make sure that no refrigerant is leaking. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)
- During pump-down, stop the compressor before removing the refrigerant piping. If the compressor is still running and the shut-off valve is open during pump-down, air will be sucked in when the refrigerant piping is removed, causing abnormally high pressure which could lead to equipment damage or and personal injury.
- During installation, attach the refrigerant piping securely before running the compressor.
  If the compressor is not attached and the shut-off valve is open during pump-down, air will be sucked in when the compressor is run, causing abnormally high pressure whichcould lead to equipment damage and personal injury.
- Install an leak circuit breaker, as required. If an leak circuit breaker is not installed, electric shock may result.
- Be sure to establish a ground. Do not ground the unit to a utility pipe, arrester, or telephone ground. ⏚
  Incomplete or inadequate grounding may cause equipment damage, or electrical shock, fire and personal injury. A high surge current from lightning or other sources may cause damage to the air conditioner.
- Be sure to install a ground fault circuit interrupter breaker. Failure to install a ground fault circuit interrupter breaker may result in electrically shocks, fire or personal injury.

⚠ CAUTIONS

- Do not install the air conditioner where gas leakage would be exposed to open flames. ⃠
  If the gas leaks and builds up around the unit, it may catch fire.
- Establish drain piping according to the instructions of this manual. Inadequate piping may cause water damage.
- Tighten the flare nut according to the specified torque. A torque wrench should be used. If the flare nut is tightened too much, the flare nut may crack over time and cause refrigerant leakage.
- Do not touch the heat exchanger fins. ⃠
  Improper handling may result in injury.
- Be very careful about product transportation. Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.

11.1.2 09/12 Class

Accessories

Ⓐ Mounting plate	1	Ⓔ Remote controller holder	1	Ⓚ Operation manual	1
Ⓑ Mounting plate fixing screws M3/16” X 1”L	10	Ⓕ Fixing screws for remote controller holder M1/8” X 13/16”L	2	Ⓛ Installation manual	1
Ⓒ Air-purifying filter with photocatalytic deodorizing function	2	Ⓖ AAA dry-cell batteries	2		
Ⓓ Wireless remote controller	1	Ⓗ Indoor unit fixing screws M3/16” X 1/2”L	2		

Choosing a Site

- Before choosing the installation site, obtain user approval.

1. Indoor unit

- The indoor unit should be sited in a place where:

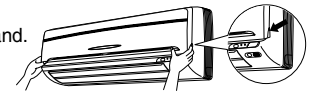
1) the restrictions on installation specified in the indoor unit installation drawings are met,
2) both air intake and exhaust have clear paths met,
3) the unit is not in the path of direct sunlight,
4) the unit is away from the source of heat or steam,
5) there is no source of machine oil vapour (this may shorten indoor unit life),
6) cool air is circulated throughout the room,
7) the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote control range,
8) the unit is at least 3.5ft away from any television or radio set (unit may cause interference with the picture or sound).

2. Wireless Remote Controller

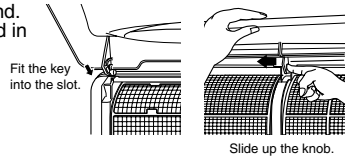
1) Turn on all the fluorescent lamps in the room, if any, and find the site where remote control signals are properly received by the indoor unit (within 23ft).

Installation Tips

1. How to remove the front grille.
1) Hold the grille by the tabs on the two sides and lift it until it stops with a click.
2) Supporting the front grille with one hand, release the lock by sliding down the knob with the other hand.
3) To remove the front grille, pull it toward yourself with both hands.

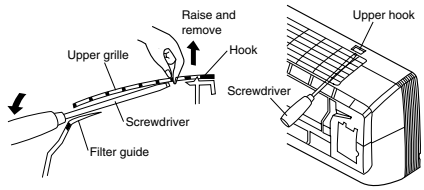


2. How to attach the front grille.
1) Set the 3 keys of the front grille into the slots and push them in all the way.
2) Supporting the front grille with one hand, fit the lock by sliding up the knob with the other hand.
3) Close the front grille slowly in this state. (Push the grille at the 3 points, two at both sides and in the middle.)



3. How to remove the front panel.
1) Open the front grille.
2) Remove the screws (2 pcs) on the front panel.
3) Pull the lower part of the front panel toward you, then remove the front panel completely. (There are 2 hooks on the upper part.)
If it is difficult to remove, open the front grille and raise the top grid, using a screwdriver, to unhook the hooks.

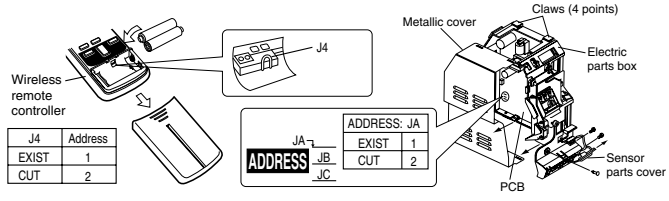
4. How to attach the front panel.
1) Attach the front panel to the front grille, and lock the upper hooks (2 points) securely.
2) Tighten the screws (2) on the front panel.
3) Close the front grille.



5. How to set the different addresses.
1) When two indoor units are installed in one room, the two wireless remote controllers can be set for different addresses.

6. PCB in the indoor unit
1) Remove the front panel.
2) Remove the sensor parts cover (2-screws), then remove the electric parts box (1-screw).
3) Slide the metallic cover to remove it. (4-claws on the electric parts box.)
4) Cut the jumper JA on PCB.

7. Wireless remote controller
1) Cut the jumper J4.



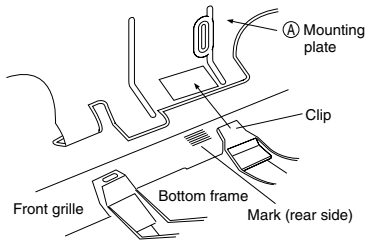
J4	Address
EXIST	1
CUT	2

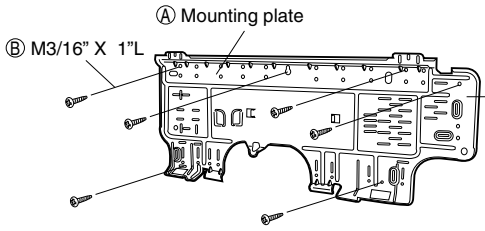
ADDRESS: JA	
EXIST	1
CUT	2

Indoor Unit Installation Drawings

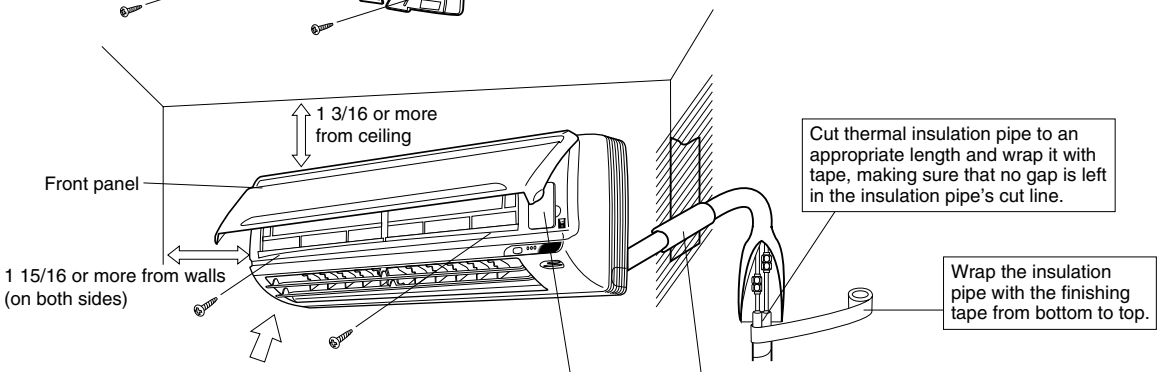
■ **How to attach the indoor unit.**
Hook the claws of the bottom frame to the mounting plate. If the claws are difficult to hook, remove the front grille.

■ **How to remove the indoor unit.**
Push up the marked area (at the lower part of the front grille) to release the claws. If it is difficult to release, remove the front grille.





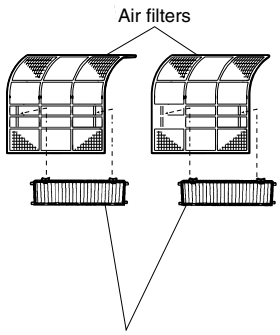
The mounting plate should be installed on a wall which can support the weight of the indoor unit.



Cut thermal insulation pipe to an appropriate length and wrap it with tape, making sure that no gap is left in the insulation pipe's cut line.

Wrap the insulation pipe with the finishing tape from bottom to top.

Caulk pipe hole gap with putty.



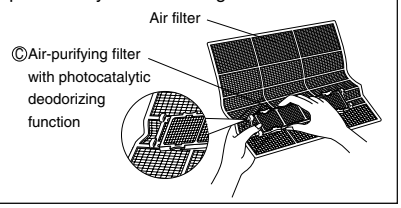
Service lid

This service lid is an open/close type.

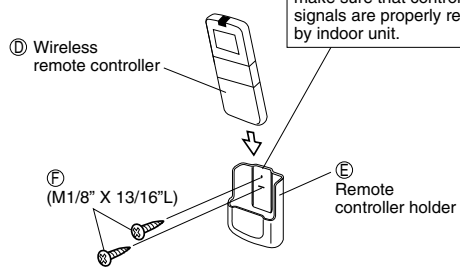
- Remove the screws on the service lid.
- Slide the service lid leftward.
- Rotate the service lid upward.

Ⓒ Air-purifying filter with photocatalytic deodorizing function

Install Air-purifying filter with photocatalytic deodorizing function on air filter



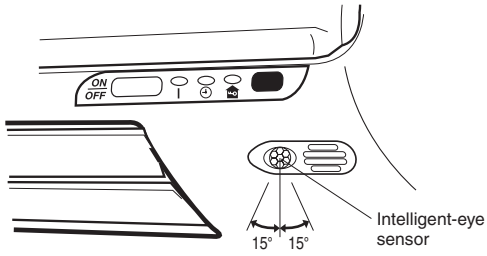
Before screwing the remote controller holder to the wall, make sure that control signals are properly received by indoor unit.



Intelligent-Eye Sensor

1. Adjusting the angle

1) Once installation of the indoor unit is complete, adjust the angle of the Intelligent-eye sensor to ensure the detection area properly covers the room. (Adjustable angle: 15° to right and left of center)



2) Gently push and slide the sensor to adjust the angle. Aim so that the sensor is pointing to the centre of the room, or to the part of the room that is most frequently used.

Moving the sensor to the left Moving the sensor to the right

3) After adjusting the angle, gently wipe the sensor with a clean cloth, being careful not to scratch the sensor.

⚠ Caution

1) Do not hit or violently push the Intelligent-eye sensor. This can lead to damage and malfunction.
2) Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area.

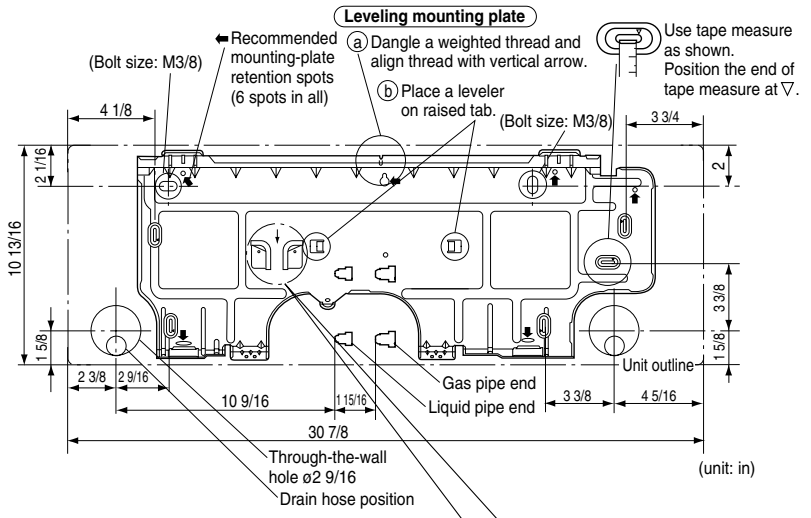
Indoor Unit Installation

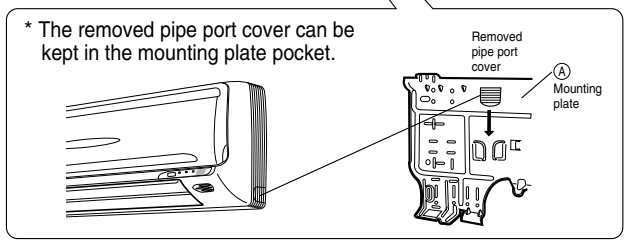
1. Installing the mounting plate

- The mounting plate should be installed on a wall which can support the weight of the indoor unit.

1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
2) Secure the mounting plate to the wall with screws.

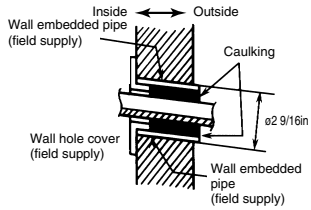
Recommended mounting-plate retention spots and Dimensions





2. Boring a wall hole and installing wall embedded pipe

- For walls containing metal frame or metal board, be sure to use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.

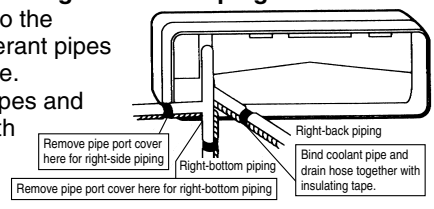


1) Bore a feed-through hole of 2 9/16in in the wall so it has a down slope toward the outside.
2) Insert a wall pipe into the hole.
3) Insert a wall cover into wall pipe.
4) After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.

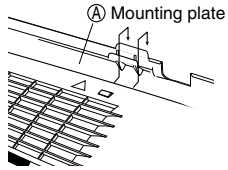
3. Installing indoor unit

3-1. Right-Side, Right-Back, or Right-Bottom Piping

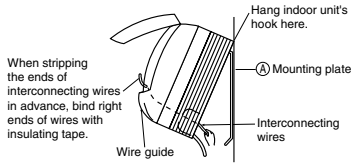
1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.
2) Wrap the refrigerant pipes and drain hose together with insulation tape.


Right-back piping
Remove pipe port cover here for right-side piping
Right-bottom piping
Bind coolant pipe and drain hose together with insulating tape.
Remove pipe port cover here for right-bottom piping

3) Pass the drain hose and refrigerant pipes through the wall hole, then set the indoor unit on the mounting plate hooks by using the △ markings at the top of the indoor unit as a guide.



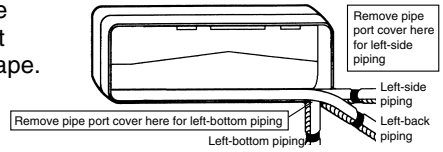
4) Open the front grille, then open the service lid. (Refer to Installation Tips.)
5) Pass the interconnecting wires from the outdoor unit through the feed-through wall hole and then through the back of the indoor unit. Pull them through the front side.
Bend the ends of tie wires upward in advance for easier work. (If the interconnecting wire ends are to be stripped first, bundle wire ends with adhesive tape.)


Hang indoor unit's hook here.
When stripping the ends of interconnecting wires in advance, bind right ends of wires with insulating tape.
Ⓐ Mounting plate
Interconnecting wires
Wire guide

6) Press the indoor unit's bottom panel with both hands to set it on the mounting plate hooks. Make sure the wires do not catch on the edge of the indoor unit.

3-2. Left-Side, Left-Back, or Left Bottom Piping

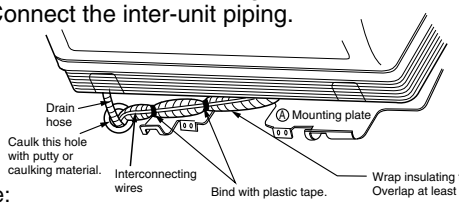
1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.


Remove pipe port cover here for left-side piping
Left-side piping
Left-back piping
Remove pipe port cover here for left-bottom piping
Left-bottom piping

2) Be sure to connect the drain hose to the drain port in place of a drain plug.

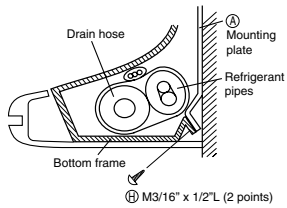
How to set drain plug
No gap
Do not apply lubricating oil (refrigerant machine oil) when inserting
Application of causes deterioration and drain leakage of the plug
Insert a hexagon wrench (3/16")

3) Shape the refrigerant pipe along the pipe path marking on the mounting plate.
4) Pass drain hose and refrigerant pipes through the wall hole, then set the indoor unit on mounting plate hooks, using the △ markings at the top of indoor unit as a guide.
5) Pull in the interconnecting wires.
6) Connect the inter-unit piping.


Drain hose
Ⓐ Mounting plate
Caulk this hole with putty or caulking material.
Interconnecting wires
Bind with plastic tape.
Wrap insulating tape around the bent portion of refrigerant pipe. Overlap at least half the width of the tape with each turn.

Note:

1) Wrap the refrigerant pipes and drain hose together with insulation tape as right figure, in case of setting the drain hose through the back of the indoor unit.
2) If it is difficult to fix the claws of the bottom frame on the catches of the mounting plate. Secure indoor unit to the mounting plate with screws (M3/16" x 1/2"L).

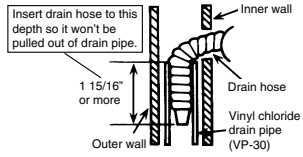


3-3. Wall Embedded Piping

Follow the instructions given under

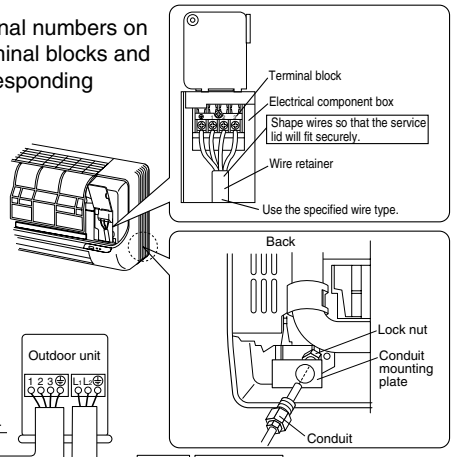
Left-Side, Left-Back, or Left Bottom Piping

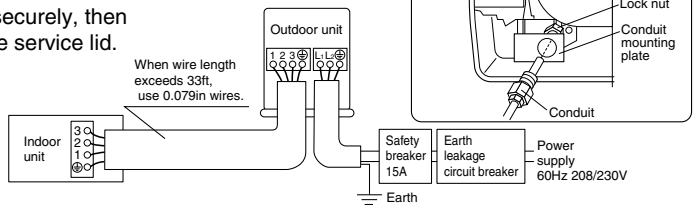
1) Insert the drain hose to this depth so it wont be pulled out of the drain pipe.


Insert drain hose to this depth so it won't be pulled out of drain pipe.
Inner wall
1 15/16" or more
Drain hose
Vinyl chloride drain pipe (VP-30)
Outer wall

4. Wiring

1) Strip wire ends (9/16in).
2) Match wire colours with terminal numbers on indoor and outdoor units' terminal blocks and firmly screw wires to the corresponding terminals.
3) Connect the earth wires to the corresponding terminals.
4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
5) Shape the wires so that the service lid fits securely, then close service lid.



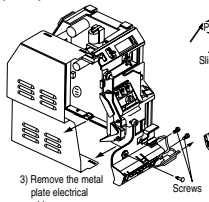


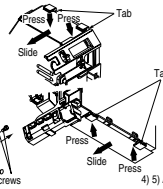
⚠ Warning

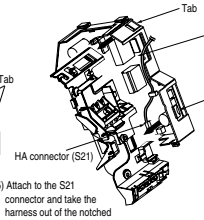
1) Do not use spliced wires, stand wires, extension cords, or starbust connections, as they may cause overheating, electrical shock, or fire. Follow all Local, and State electrical codes.
2) Do not use locally purchased electrical parts inside the product. (Do not overload the circuit by adding drain pump or other electrical equipment to unit terminals.) Doing so may cause electric shock or fire.
3) When carrying out wiring connection, take care not to pull at the conduit.

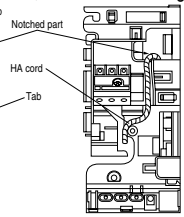
5. When connecting to an HA system

1) Remove the front grille. (2 screws)
2) Remove the electrical wiring box. (3 screws)
3) Remove the metal plate electrical wiring cover. (4 tabs)
4) Remove the resin plastic electrical wiring cover. (2 tabs)
5) Attach the connection cord to the S21 connector and pull the harness out through the notched part in the figure.
6) Replace the electrical wiring cover as it was, and pull the harness around, as shown in the figure.



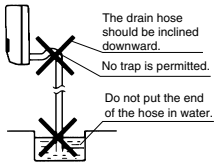




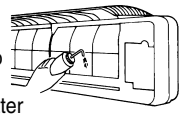


6. Drain piping.

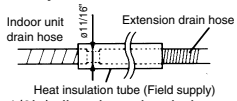
1) Connect the drain hose, as described below



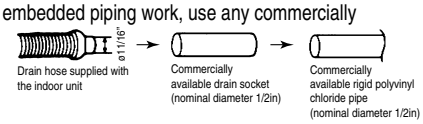
2) Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



3) When drain hose requires extension, obtain an extension hose commercially available. Be sure to thermally insulate the indoor section of the extension hose.



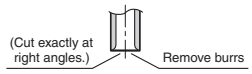
4) When connecting a rigid polyvinyl chloride pipe (nominal diameter 1/2in) directly to the drain hose attached to the indoor unit as with embedded piping work, use any commercially available drain socket (nominal diameter 1/2in) as a joint.


ø1 1/16"
Drain hose supplied with the indoor unit
Commercially available drain socket (nominal diameter 1/2in)
Commercially available rigid polyvinyl chloride pipe (nominal diameter 1/2in)

Refrigerant piping work

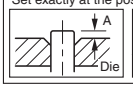
1. Flaring the pipe end

1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.



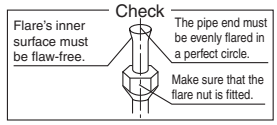
Flaring

Set exactly at the position shown below.



	Flare tool for R-410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0 ~ 0.020"	0.039 ~ 0.059"	0.059 ~ 0.079"

Check

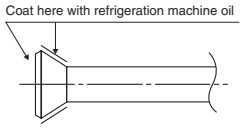

Flare's inner surface must be flaw-free.
The pipe end must be evenly flared in a perfect circle.
Make sure that the flare nut is fitted.

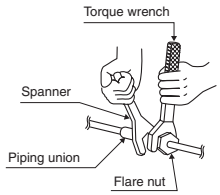
⚠ Warning

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the unit life.
3) Never use piping which has been used for previous installations. Only use parts which are provided with the unit.
4) Do never install a refrigerant drier to this unit.
5) The drying material may dissolve and damage the system.
6) Incomplete or improper flaring may cause refrigerant gas leakage.

2. Refrigerant piping

1) Align the centres of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   • Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.
2) To prevent gas leakage, apply refrigeration machine oil on both inner and outer surfaces of the flare.



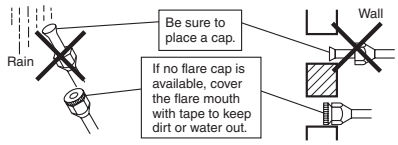


Flare nut tightening torque	
Gas side	Liquid side
3/8 inch	1/4 inch
24.1~29.4ft • lbf	10.4~12.7ft • lbf

Valve cap tightening torque	
Gas side	Liquid side
3/8 inch	1/4 inch
15.9~20.2ft • lbf	

2-1. Cautions on Pipe Handling

1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending.
   (Bending radius should be 1 3/16 to 1 9/16in or larger.)



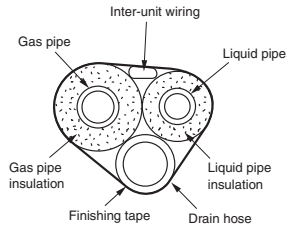
2-2. Selection of Copper and Heat Insulation materials

• When using commercial copper pipes and fittings, observe the following:

1) Insulation material: Polyethylene foam
   Heat transfer rate: 0.041 to 0.052 kW/mK (0.024-0.030 Btu/fth°F)
   Refrigerant gas pipe's surface temperature reaches 230°F max.
   Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Gas side	Liquid side	Gas pipe thermal insulation	Liquid pipe thermal insulation
09/12 class		09/12 class	
O.D. 3/8"	O.D. 1/4"	I.D. 1/2-2/3"	I.D. 1/3-1/2"
Thickness 1/32"		Thickness 1/3" minimum	

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.



Trial Operation and Testing

1. Trial Operation and Testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1) Trial operation may be disabled in either mode depending on the room temperature.
  2) After trial operation is complete, set the temperature to a normal level (78°F to 82°F in cooling mode, 68°F to 75°F in heating mode).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from Remote Controller

1) Press ON/OFF button to turn on the system.
2) Simultaneously press center of TEMP button and MODE button.
3) Press MODE button twice.
   (" ｱﾄ " will appear on the display to indicate that Trial Operation mode is selected.)
4) Trial run mode terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press ON/OFF button.

2. Test Items.

Test Items	Symptom	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Drain line is properly installed.	Water leakage	
System is properly ground to earth.	Electrical leakage	
The specified wires are used for interconnecting wire connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Shut-off valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote control commands.	Inoperative	

3P141697-1G

11.1.3 15/18/24 Class

Accessories

Ⓐ Mounting plate	1	Ⓔ Remote controller holder	1	Ⓚ Operation manual	1
Ⓑ Mounting plate fixing screws M3/16" × 1"L	10	Ⓕ Fixing screws for remote controller holder M1/8" × 13/16"L	2	Ⓛ Installation manual	1
Ⓒ Air-purifying filter with photocatalytic deodorizing function	2	Ⓖ AAA dry-cell batteries	2		
Ⓓ Wireless remote controller	1	Ⓗ Indoor unit fixing screws M3/16" × 1/2"L	2		

Choosing a Site

• Before choosing the installation site, obtain user approval.

1. Indoor unit.

- The indoor unit should be sited in a place where:

1) the restrictions on installation specified in the indoor unit installation drawings are met,
2) both air intake and exhaust have clear paths met,
3) the unit is not in the path of direct sunlight,
4) the unit is away from the source of heat or steam,
5) there is no source of machine oil vapour (this may shorten indoor unit life),
6) cool air is circulated throughout the room,
7) the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote control range,
8) the unit is at least 3.5 ft away from any television or radio set (unit may cause interference with the picture or sound).

2. Wireless remote controller.

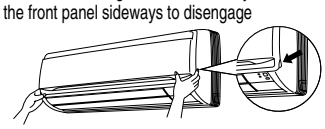
1) Turn on all the fluorescent lamps in the room, if any, and find the site where remote control signals are properly received by the indoor unit (within 23 ft).

Installation Tips

1. Removing and installing front panel

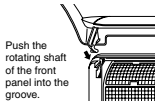
• **Removal method**

Hook fingers on the panel protrusions on the left and right of the main body, and open until the panel stops. Slide the front panel sideways to disengage the rotating shaft. Then pull the front panel toward you to remove it.



• **Installation method**

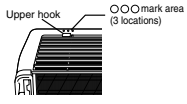
Align the tabs of the front panel with the grooves, and push all the way in. Then close slowly. Push the center of the lower surface of the panel firmly to engage the tabs.

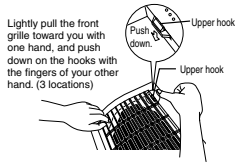


2. Removing and installing front grille

• **Removal method**

1) Remove front panel to remove the air filter.
2) Remove the front grille. (3 screws)
3) In front of the ○○○ mark of the front grille, there are 3 upper hooks. Lightly pull the front grille toward you with one hand, and push down on the hooks with the fingers of your other hand.



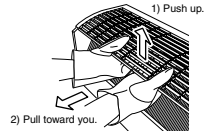

Lightly pull the front grille toward you with one hand, and push down on the hooks with the fingers of your other hand. (3 locations)
Push down.
Upper hook
Upper hook

<When there is no work space because the unit is close to ceiling>

⚠ Caution

Be sure to wear protection gloves.

Place both hands under the center of the front grille, and while pushing up, pull it toward you.



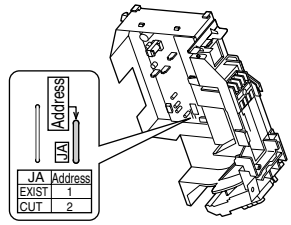
• **Installation method**

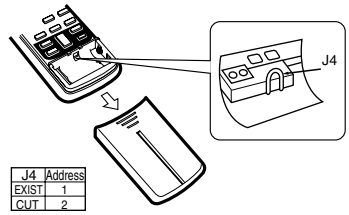
1) Install the front grille and firmly engage the upper hooks (3 locations).
2) Install 2screws(18class)or 3screws(20, 24class)of the front grill.
3) Install the air filter and then mount the front panel.

3. How to set the different addresses

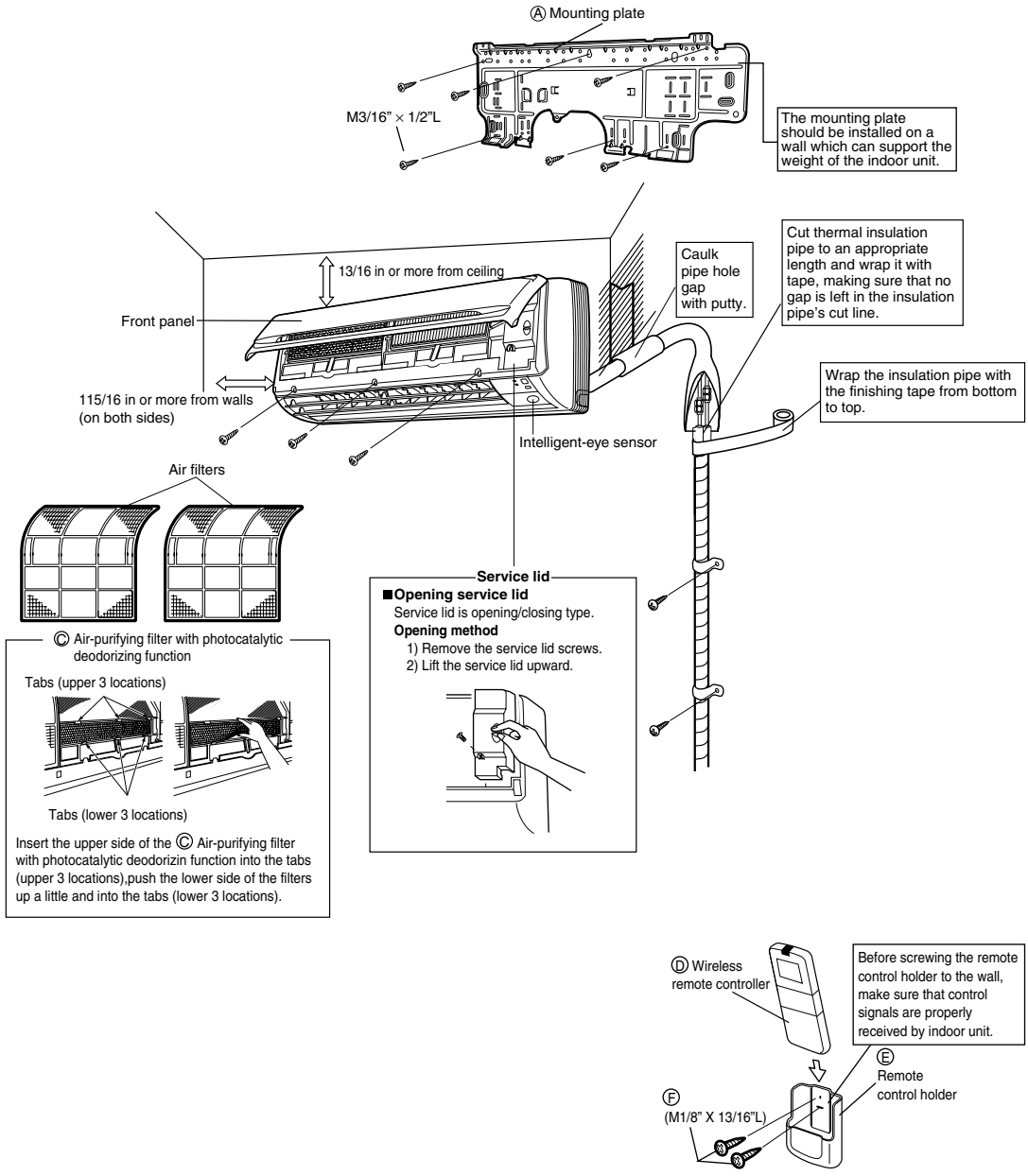
When two indoor units are installed in one room, the two wireless remote controllers can be set for different addresses.

1) In the same way as when connecting to an HA system, remove the metal plate electrical wiring cover.
2) Cut the address jumper (JA).
3) Cut the address jumper (J4).





Indoor Unit Installation Drawings


Ⓐ Mounting plate
M3/16" × 1/2"L
The mounting plate should be installed on a wall which can support the weight of the indoor unit.
13/16 in or more from ceiling
Front panel
115/16 in or more from walls (on both sides)
Caulk pipe hole gap with putty.
Cut thermal insulation pipe to an appropriate length and wrap it with tape, making sure that no gap is left in the insulation pipe's cut line.
Wrap the insulation pipe with the finishing tape from bottom to top.
Intelligent-eye sensor
Air filters
Service lid
■Opening service lid
Service lid is opening/closing type.
Opening method
1) Remove the service lid screws.
2) Lift the service lid upward.
Ⓒ Air-purifying filter with photocatalytic deodorizing function
Tabs (upper 3 locations)
Tabs (lower 3 locations)
Insert the upper side of the Ⓒ Air-purifying filter with photocatalytic deodorizin function into the tabs (upper 3 locations),push the lower side of the filters up a little and into the tabs (lower 3 locations).
Ⓓ Wireless remote controller
Before screwing the remote control holder to the wall, make sure that control signals are properly received by indoor unit.
Ⓔ Remote control holder
Ⓕ (M1/8" X 13/16"L)

Intelligent-eye sensor

⚠ Caution

1) Do not hit or violently push the Intelligent-eye sensor. This can lead to damage and malfunction.
2) Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area.

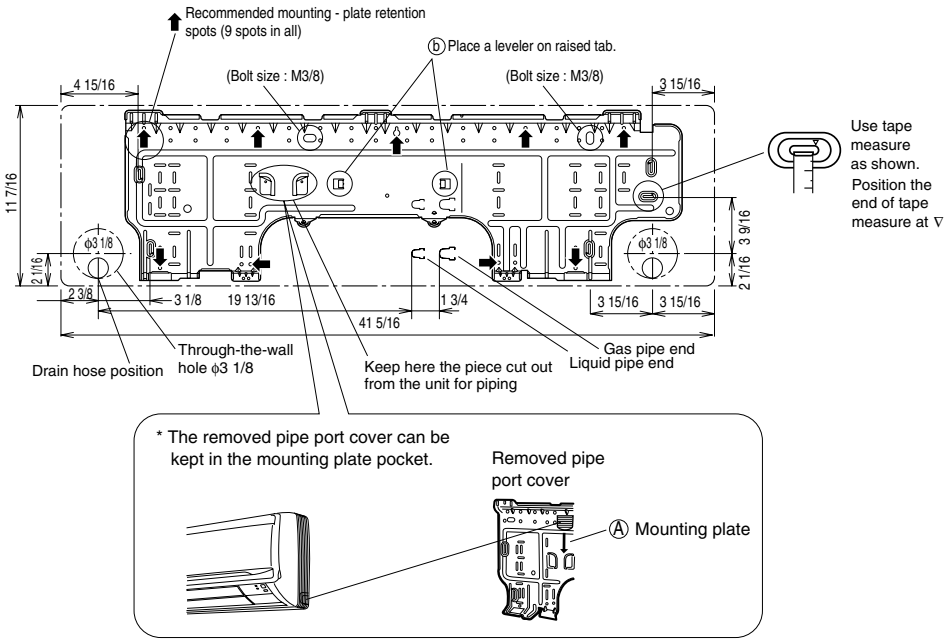
Indoor Unit Installation

1. Installing the mounting plate.

The mounting plate should be installed on a wall which can support the weight of the indoor unit.

1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
2) Secure the mounting plate to the wall with screws.

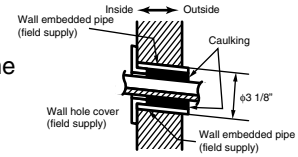
Recommended mounting-plate retention spots and Dimensions


Recommended mounting - plate retention spots (9 spots in all)
ⓑ Place a leveler on raised tab.
(Bolt size : M3/8)
(Bolt size : M3/8)
4 15/16
3 15/16
11 7/16
2 1/16
ϕ3 1/8
ϕ3 1/8
2 1/16
3 9/16
2 3/8
3 1/8
19 13/16
1 3/4
3 15/16
3 15/16
41 5/16
Use tape measure as shown. Position the end of tape measure at ∇
Drain hose position
Through-the-wall hole ϕ3 1/8
Keep here the piece cut out from the unit for piping
Gas pipe end
Liquid pipe end
* The removed pipe port cover can be kept in the mounting plate pocket.
Removed pipe port cover
Ⓐ Mounting plate

Indoor Unit Installation

2. Boring a wall hole and installing wall embedded pipe.

- For walls containing metal frame or metal board, be sure to use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.

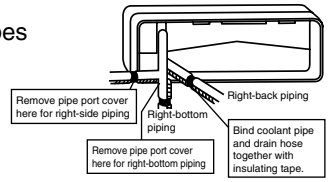


1) Bore a feed-through hole of 3 1/8in in the wall so it has a down slope toward the outside.
2) Insert a wall pipe into the hole.
3) Insert a wall cover into wall pipe.
4) After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.

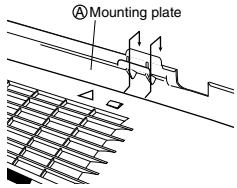
3. Installing indoor unit.

3-1. Right-Side, Right-Back, or Right-Bottom Piping

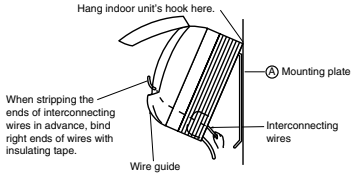
1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.
2) Wrap the refrigerant pipes and drain hose together with insulation tape.


Remove pipe port cover here for right-side piping
Right-back piping
Right-bottom piping
Bind coolant pipe and drain hose together with insulating tape.
Remove pipe port cover here for right-bottom piping

3) Pass the drain hose and refrigerant pipes through the wall hole, then set the indoor unit on the mounting plate hooks by using the △ markings at the top of the indoor unit as a guide.



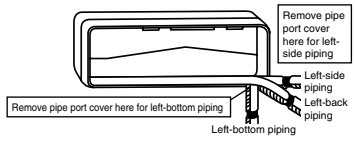
4) Open the front grille, then open the service lid. (Rifer to Installation tips)
5) Pass the interconnecting wires from the outdoor unit through the feed-through wall hole and then through the back of the indoor unit. Pull them through the front side.
   Bend the ends of tie wires upward in advance for easier work. (If the interconnecting wire ends are to be stripped first, bundle wire ends with adhesive tape.)


Hang indoor unit's hook here.
Ⓐ Mounting plate
When stripping the ends of interconnecting wires in advance, bind right ends of wires with insulating tape.
Interconnecting wires
Wire guide

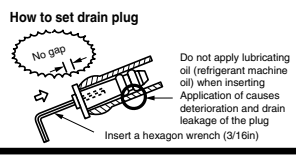
6) Press the indoor unit's bottom panel with both hands to set it on the mounting plate hooks. Make sure the wires do not catch on the edge of the indoor unit.

3-2. Left-Side, Left-Back, or Left Bottom Piping

1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.

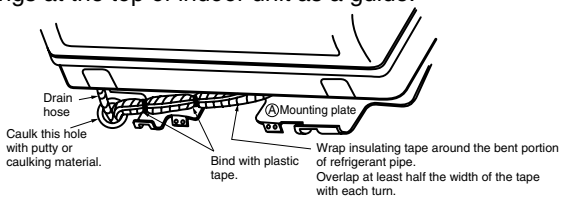

Remove pipe port cover here for left-side piping
Left-side piping
Left-back piping
Remove pipe port cover here for left-bottom piping
Left-bottom piping

2) Be sure to connect the drain hose to the drain port in place of a drain plug.

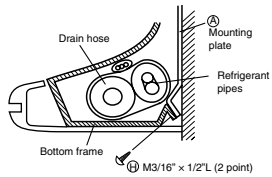

How to set drain plug
No gap
Do not apply lubricating oil (refrigerant machine oil) when inserting Application of causes deterioration and drain leakage of the plug
Insert a hexagon wrench (3/16in)

Indoor Unit Installation

3) Shape the refrigerant pipe along the pipe path marking on the mounting plate.
4) Pass drain hose and refrigerant pipes through the wall hole, then set the indoor unit on mounting plate hooks, using the △ markings at the top of indoor unit as a guide.


Drain hose
Ⓐ Mounting plate
Caulk this hole with putty or caulking material.
Bind with plastic tape.
Wrap insulating tape around the bent portion of refrigerant pipe. Overlap at least half the width of the tape with each turn.

5) Pull in the interconnecting wires.
6) Connect the inter-unit piping.
7) Wrap the refrigerant pipes and drain hose together with insulation tape as right figure, in case of setting the drain hose through the back of the indoor unit.
8) While exercising care so that the interconnecting wires do not catch indoor unit, press the bottom edge of indoor unit with both hands until it is firmly caught by the mounting plate hooks. Secure indoor unit to the mounting plate with screws (M3/16" × 1/2"L).

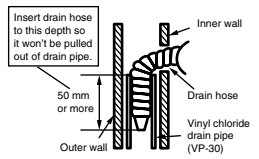


3-3. Wall Embedded Piping

Follow the instructions given under

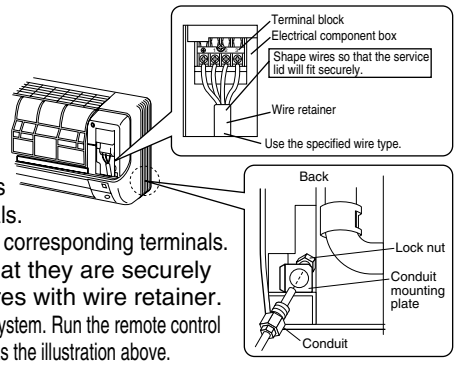
Left-Side, Left-Back, or Left Bottom Piping

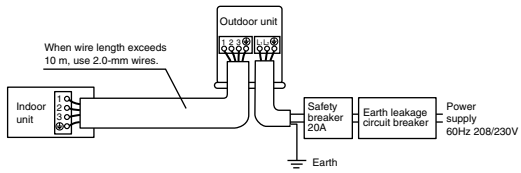
1) Insert the drain hose to this depth so it wont be pulled out of the drain pipe.


Insert drain hose to this depth so it won't be pulled out of drain pipe.
Inner wall
50 mm or more
Drain hose
Vinyl chloride drain pipe (VP-30)
Outer wall

4. Wiring.

1) Strip wire ends (9/16in).
2) Match wire colours with terminal numbers on indoor and outdoor unit's terminal blocks and firmly screw wires to the corresponding terminals.
3) Connect the earth wires to the corresponding terminals.
4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
5) In case of connecting to an adapter system. Run the remote control cable and attach the S21 connector as the illustration above.
6) Shape the wires so that the service lid fits securely, then close service lid.





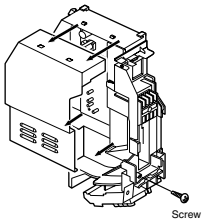
⚠ Warning

1) Do not use spliced wires, stand wires, extension cords, or starbust connections, as they may cause overheating, electrical shock, or fire. Follow all Local, and State electrical codes.
2) Do not use locally purchased electrical parts inside the product. (Do not overload the circuit by adding drain pump or other electrical equipment to unit terminals.) Doing so may cause electric shock or fire.
3) When carrying out wiring connection, take care not to pull at the conduit.

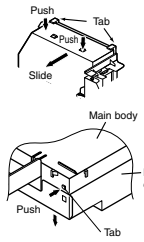
Indoor Unit Installation

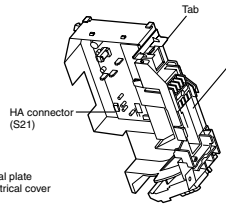
5. When connecting to an HA system.

1) Remove the front grille. (3 screws)
2) Remove the electrical wiring box. (1 screw)
3) Remove the metal plate electrical wiring cover. (4 tabs)
4) Attach the connection cord to the S21 connector and pull the harness out through the notched part in the figure.
5) Replace the electrical wiring cover as it was, and pull the harness around, as shown in the figure

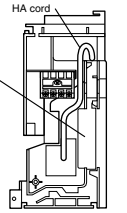


3) Remove the metal plate electrical wiring cover.





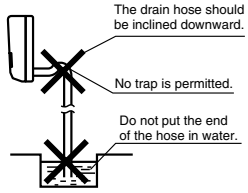
4) Attach the connection cord to the S21 connector and pull the harness out through the notched part in the figure.



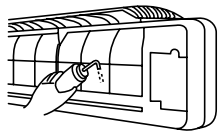
5) Replace the electrical wiring cover as it was, and pull the harness around, as shown in the figure.

6. Drain piping.

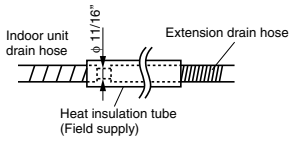
1) Connect the drain hose, as described below.



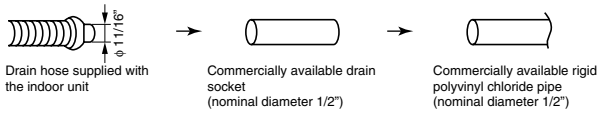
2) Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



3) When drain hose requires extension, obtain an extension hose commercially available.
Be sure to thermally insulate the indoor section of the extension hose.



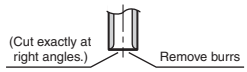
4) When connecting a rigid polyvinyl chloride pipe (nominal diameter 1/2in) directly to the drain hose attached to the indoor unit as with embedded piping work, use any commercially available drain socket (nominal diameter 1/2in) as a joint.

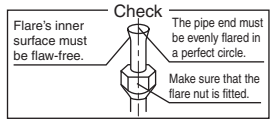

ϕ 11/16"
Drain hose supplied with the indoor unit
Commercially available drain socket (nominal diameter 1/2")
Commercially available rigid polyvinyl chloride pipe (nominal diameter 1/2")

Refrigerant piping work

1. Flaring the Pipe End

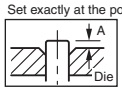
1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.




Check
Flare's inner surface must be flaw-free.
The pipe end must be evenly flared in a perfect circle.
Make sure that the flare nut is fitted.

Flaring

Set exactly at the position shown below.



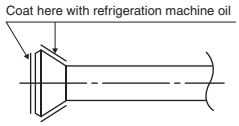
	Flare tool for R-410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0 ~ 0.020"	0.039 ~ 0.059"	0.059 ~ 0.079"

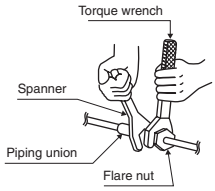
⚠ Warning

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the unit life.
3) Never use piping which has been used for previous installations. Only use parts which are provided with the unit.
4) Do never install a refrigerant drier to this unit.
5) The drying material may dissolve and damage the system.
6) Incomplete or improper flaring may cause refrigerant gas leakage.

2. Refrigerant Piping

1) Align the centers of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   • Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.
2) To prevent gas leakage, apply refrigeration machine oil on both inner and outer surfaces of the flare. (Use refrigeration oil for R410A)





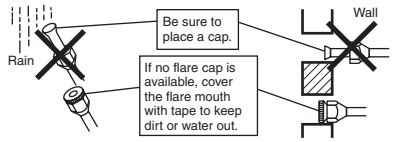
Flare nut tightening torque		
Gas side		Liquid side
1/2 inch	5/8 inch	1/4 inch
36.5~44.5ft • bf	45.6~55.6ft • lbf	10.4~12.7ft • lbf

Valve cap tightening torque		
Gas side		Liquid side
1/2 inch	5/8 inch	1/4 inch
35.5~44.0ft • lbf	32.5~39.7ft • lbf	15.9~20.2ft • lbf

Service port cap tightening torque	7.9~10.8ft • lbf

2-1. Caution on Piping Handling

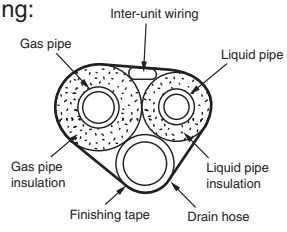
1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending.
   (Bending radius should be 1 3/16 to 1 9/16in or larger.)



2-2. Selection of Copper and Heat Insulation materials

• When using commercial copper pipes and fittings, observe the following:

1) Insulation material: Polyethylene foam
   Heat transfer rate: 0.041 to 0.052 W/mK (0.024-0.030 Btu/fthºF)
   Refrigerant gas pipe's surface temperature reaches 230ºF max.
   Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.



Gas side		Liquid side	Gas pipe thermal insulation		Liquid pipe thermal insulation
15/18 class	24 class	15/18/24 class	15/18 class	24 class	15/18/24 class
O.D. 1/2"	O.D. 5/8"	O.D. 1/4"	I.D. 1/2"-5/8"	I.D. 5/8"-2/3"	I.D. 1/3"-1/2"
Thickness 1/32"	Thickness 1/20"	Thickness 1/32"	Thickness 1/2" minimum		

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Run Test and Final Check

1. Trial Operation and Testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1) Trial operation may be disabled in either mode depending on the room temperature. Use the remote control for trial operation as described below.
  2) After trial operation is complete, set the temperature to a normal level (78ºF to 82ºF in cooling mode, 68ºF to 75ºF in heating mode).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial Operation from Remote Controller.

1) Press ON/OFF button to turn on the system.
2) Simultaneously press centor of TEMP button and MODE button.
3) Press MODE button twice.
   (“ 7” will appear on the display to indicate that Trial Operation mode is selected.)
4) Trial run mode terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press ON/OFF button.

2. Test Items.

Test Items	Symptom	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Drain line is properly installed.	Water leakage	
System is properly ground to earth.	Electrical leakage	
The specified wires are used for interconnecting wire connections.	Inoperative or burn damage	
Indoor or outdoor unit’s air intake or exhaust has clear path of air. Shut-off valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote control commands.	Inoperative	

3P141697-2G

11.2 Outdoor Units

11.2.1 Safety Precautions

Safety Precautions

- Read these Safety Precautions carefully to ensure correct installation.
- This manual classifies the precautions into WARNINGS and CAUTIONS. Be sure to follow all the precautions below: they are all important for ensuring safety.

⚠ WARNINGS	Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.
⚠ CAUTIONS	Failure to follow any of CAUTION may in some cases result in grave consequences.

- The following safety symbols are used throughout this manual:

❗	Be sure to observe this instruction.	⏚	Be sure to establish a proper earth grounding connection.	⊘	Never attempt.

- After completing installation, test the unit to check for installation errors. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual.

⚠ WARNINGS

- Installation should be left to the authorized dealer or another trained professional. Improper installation may cause water leakage, electrical shock, fire, or equipment damage.
- Install the air conditioner according to the instructions given in this manual. Incomplete installation may cause water leakage, electrical shock, fire or equipment damage.
- Be sure to use the supplied or exact specified installation parts. Use of other parts may cause the unit to come to lose, water leakage, electrical shock, fire or equipment damage.
- Install the air conditioner on a solid base that is level and can support the unit's weight. An inadequate base or incomplete installation may cause injury or equipment damage in the event the unit falls off the base or comes loose.
- Electrical work should be carried out in accordance with the installation manual and the national, state and local electrical wiring codes. Insufficient capacity or incomplete electrical work may cause electrical shock, fire or equipment damage.
- Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance. Follow all appropriate electrical codes.
- For wiring, use a wire or cable long enough to cover the entire distance with no splices if possible. Do not use an extension cord. Do not put other loads on the power supply.Use a only a separate dedicated power circuit. (Failure to do so may cause abnormal heat, electric shock,fire or equipment damage.)
- Use the specified types of wires for electrical connections between the indoor and outdoor units. Follow all state and local electrical codes. Firmly clamp the interconnecting wires so their terminals receive no external stresses. Incomplete connections or clamping may cause terminal overheating, fire or euipment damage.
- After connecting all wiring be sure to shape the cables so that they do not put undue stress on the electrical covers, panels or terminals. Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock,fire or equipment damage.
- When installing or relocating the system, be sure to keep the refrigerant circuit free from all substances other than the specified refrigerant (R410A), such as air. (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise which may result in rupture, resulting in injury.)
- If any refrigerant has leaked out during the installation work, ventilate the room. (The refrigerant produces a toxic gas if exposed to flames.) ❗
- After all installation is complete, check to make sure that no refrigerant is leaking. (The refrigerant produces a toxic gas if exposed to flames.) ❗
- During pump-down, stop the compressor before removing the refrigerant piping. If the compressor is still running and the shut-off valve is open during pump-down, air will be sucked in when the refrigerant piping is removed, causing abnormally high pressure which could lead to equipment damage or and personal injury.
- During installation, attach the refrigerant piping securely before running the compressor. If the compressor is not attached and the shut-off valve is open during pump-down, air will be sucked in when the compressor is run, causing abnormally high pressure whichcould lead to equipment damage and personal injury.
- Securely install the outdoor unit terminal cover (panel). If the terminal cover (panel) is not installed properly, dust or water may enter the outdoor unit and fire or electric shock may reslt.
- Install an leak circuit breaker, as required. If an leak circuit breaker is not installed, electric shock may result.
- Be sure to establish a ground. Do not ground the unit to a utility pipe, arrester, or telephone ground. Incomplete or inadequate grounding may cause equipment damage, or electrical shock, fire and personal injury. A high surge current from lightning or other sources may cause damage to the air conditioner. ⏚
- Be sure to install a ground fault circuit interrupter breaker. Failure to install a ground fault circuit interrupter breaker may result in electrically shocks, fire or personal injury.

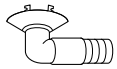
⚠ CAUTIONS

- Do not install the air conditioner where gas leakage would be exposed to open flames. If the gas leaks and builds up around the unit, it may catch fire. ⊘
- Establish drain piping according to the instructions of this manual. Inadequate piping may cause water damage.
- Tighten the flare nut according to the specified torque. A torque wrench should be used. If the flare nut is tightened too much, the flare nut may crack over time and cause refrigerant leakage.
- Be very careful about product transportation. Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- Never perform outdoor unit piping connection work when it is raining.
- Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

11.2.2 09/12 Class

Accessories

Accessories supplied with the outdoor unit:

(A) Installation manual	1	(B) Drain plug (Heat pump-Models)  Located on the bottom of the packing case.	1

Precautions for Selecting the Location

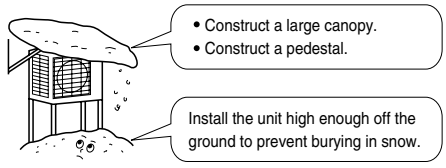
1) Choose a place strong enough to bear the weight and vibration of the unit, The location should not amplified the unit noise.
2) Choose a location where the hot air discharged from the unit and the operationing noise will not be a nuisance to the neighbors.
3) Avoid noise sensitive locations such as bedrooms to avoid future problems.
4) There must be sufficient clearance for carrying the unit into and out of the site.
5) There must be sufficient space around the air inlet and the air outlet with no obstructions to airflow.
6) The surrounding area must be free from the possibility of flammable gas leakage.
7) Install units, power cords and inter-connecting cables at least 10 feet away from television and radio sets. This is to prevent interference to images and sounds. (Noises may be heard even if they are more than 10 feet away depending on radio wave conditions.)
8) In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the air conditioner.
9) Do not place moisture sensitive equipment or articles under the outdoor unit condenstate drain.

NOTE
Do not install unit by hanging from a ceiling or stacking units.

⚠ Caution

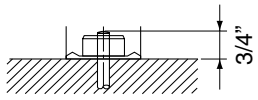
When operating the air conditioner in a outdoor temperature below, be sure to follow the instructions described below.

1) To prevent exposure to wind, install the outdoor unit with its suction side facing the wall.
2) Never install the outdoor unit at a site where the suction side may be exposed directly to wind.
3) To prevent exposure to wind, it is recommended to install a baffle plate on the air discharge side of the outdoor unit.
4) In heavy snowfall areas, select an installation site where the snow will not affect the unit.



Precautions on Installation

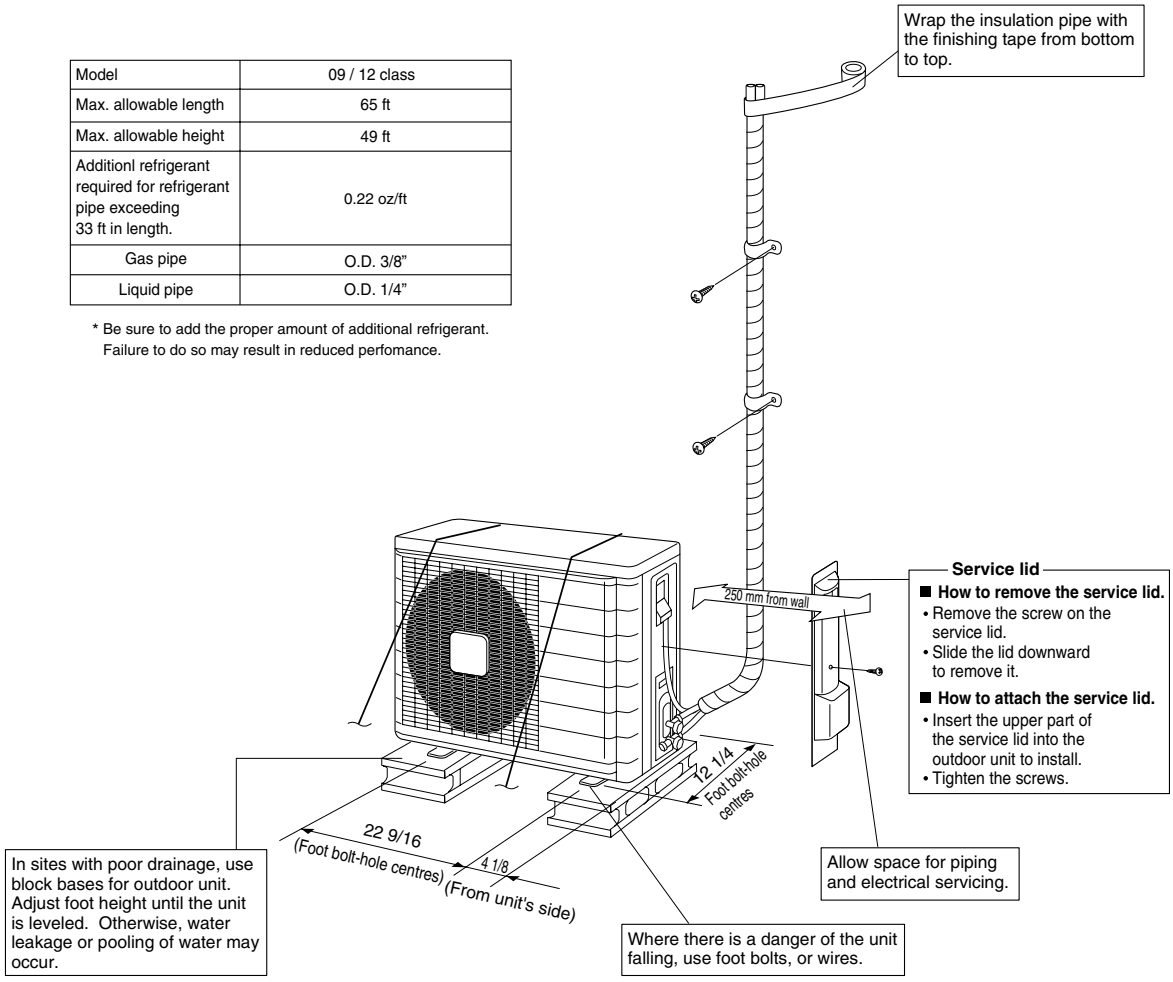
- Ensure the strength and level of the installation will not cause any operating vibration or noise after installed.
- In accordance with the foundation drawing, fix the unit securely by means of the foundation bolts. (Prepare four sets of 3/8” or 7/16” foundation bolts, nuts and washers each which are available on the market.)
- It is best to screw in the foundation bolts until their length are 3/4” from the foundation surface.



Outdoor Unit Installation Drawings

Model	09 / 12 class
Max. allowable length	65 ft
Max. allowable height	49 ft
Additionl refrigerant required for refrigerant pipe exceeding 33 ft in length.	0.22 oz/ft
Gas pipe	O.D. 3/8”
Liquid pipe	O.D. 1/4”

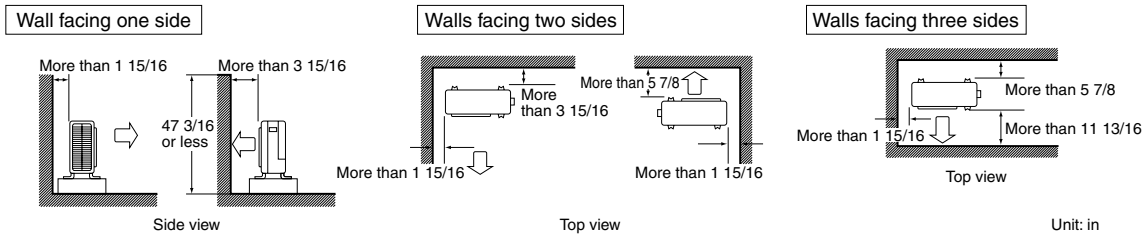
* Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced perfomance.


Wrap the insulation pipe with the finishing tape from bottom to top.
250 mm from wall
Service lid
■ How to remove the service lid.
• Remove the screw on the service lid.
• Slide the lid downward to remove it.
■ How to attach the service lid.
• Insert the upper part of the service lid into the outdoor unit to install.
• Tighten the screws.
12 1/4
Foot bolt-hole centres
22 9/16
(Foot bolt-hole centres)
4 1/8
(From unit's side)
In sites with poor drainage, use block bases for outdoor unit. Adjust foot height until the unit is leveled. Otherwise, water leakage or pooling of water may occur.
Allow space for piping and electrical servicing.
Where there is a danger of the unit falling, use foot bolts, or wires.

unit: in

Installation Guidelines

- Where a wall or other obstacle is in the path of outdoor unit’s intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the exhaust side should be 4 ft or less.



Unit: in

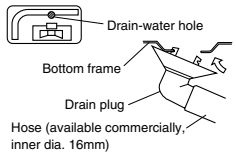
Outdoor Unit Installation

1. Installing Outdoor Unit

1) When installing the outdoor unit, refer to “Precautions for Selecting the Location” and the “Outdoor Unit Installation Drawings”.
2) If drain work is necessary, follow the procedures below.

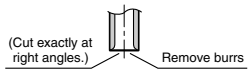
2. Drain Work (Heat pump-Models)

1) Use drain plug for drainage.
2) If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 1 1/4” in height under the outdoor unit’s feet.
3) In cold areas, do not use a drain hose with the outdoor unit. (Otherwise, drain water may freeze, impairing heating performance.)



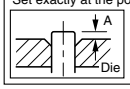
3. Flaring the Pipe End

1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.



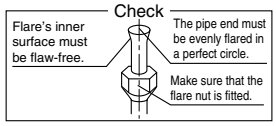
Flaring

Set exactly at the position shown below.



	Flare tool for R410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0 ~ 0.020”	0.039 ~ 0.059”	0.059 ~ 0.079”

Check

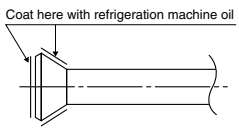

Flare’s inner surface must be flaw-free.
The pipe end must be evenly flared in a perfect circle.
Make sure that the flare nut is fitted.

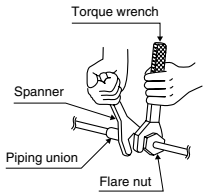
⚠ Warning

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the unit life.
3) Never use piping which has been used for previous installations. Only use parts which are provided with the unit.
4) Do never install a refrigerant drier to this unit.
5) The drying material may dissolve and damage the system.
6) Incomplete or improper flaring may cause refrigerant gas leakage.

4. Refrigerant Piping

1) Align the centers of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   • Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.
2) To prevent gas leakage, apply refrigeration machine oil on both inner and outer surfaces of the flare. (Use refrigeration oil for R410A)





Flare nut tightening torque	
Gas side	Liquid side
3/8 inch	1/4 inch
24.1~29.4ft • lbf	10.4~12.7ft • lbf

Valve cap tightening torque	
Gas side	Liquid side
3/8 inch	1/4 inch
15.9~20.2ft • lbf	15.9~20.2ft • lbf

Service port cap tightening torque	7.9~10.8ft • lbf

Outdoor Unit Installation

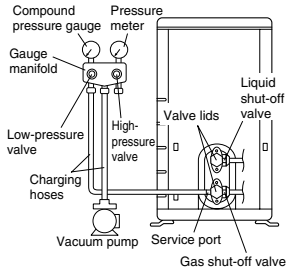
5. Purging Air and Checking for Gas Leakage

- When the piping work is completed, it is necessary to purge the air and check for gas leakage.

⚠ Warning

1) Do not place any substance other than the specified refrigerant (R410A) into the refrigeration cycle.
2) When a refrigerant gas leak occurs, ventilate the room as soon and as much as possible.
3) R410A, as well as other refrigerants, should always be recovered and never be released directly into the environment.
4) Use a vacuum pump for R410A exclusively. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.

- If adding additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump before charging additional refrigerant.
- Use a hexagonal wrench (3/16") to operate the shut-off valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench to the specified tightening torque.



1) Connect projection side (on which worm pin is pressed) of charging hose (which comes from gauge manifold) to gas shut-off valve's service port.

↓

2) Fully open gauge manifold's low-pressure valve (Lo) and completely close its high-pressure valve (Hi). (High-pressure valve subsequently requires no operation.)

↓

3) Do vacuum pumping and make sure that the vacuum pressure gauge reads – 29.9 inHg *1.

↓

4) Close gauge manifold's low-pressure valve (Lo) and stop vacuum pump. (Keep this state for a few minutes to make sure that the vacuum pressure gauge pointer does not swing back.)*2.

↓

5) Remove covers from liquid shut-off value and gas shut-off valve.

↓

6) Turn the liquid shut-off valve's rod 90 degrees counterclockwise with a hexagonal wrench to open valve. Close it after 5 seconds, and check for gas leakage. Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods. After the check is complete, wipe all soapy water off.

↓

7) Disconnect charging hose from gas shut-off valve's service port, then fully open liquid and gas shut-off valves. (Do not attempt to turn valve rod beyond its stop.)

↓

8) Tighten valve lids and service port caps for the liquid and gas shut-off valves with a torque wrench at the specified torques.

*1. Pipe length vs. vacuum pump run time

Pipe length	Up to 50 feet	More than 50 feet
Run time	Not less than 10 min.	Not less than 15 min.

*2. If the vacuum pressure gauge pointer swings back, refrigerant may have water content or a loose pipe joint may exists. Check all pipe joints and retighten nuts as needed, then repeat steps 2) through 4).

6. Refilling The Refrigerant

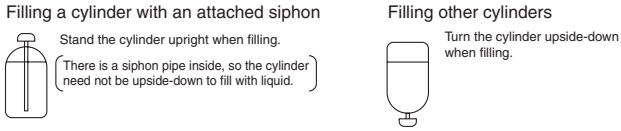
Check the type of refrigerant to be used on the machine nameplate.

Precautions when adding R410A

Fill from the liquid pipe in liquid form.

It is a mixture of refrigerant, so adding it in gas form may cause the refrigerant composition to change, preventing normal operation.

1) Before filling, check whether the cylinder has a siphon attached or not. (It should have something like "liquid filling siphon attached" displayed on it.)

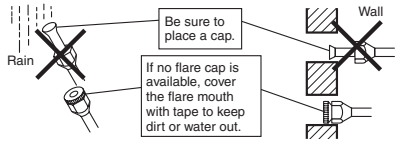

Filling a cylinder with an attached siphon
Stand the cylinder upright when filling.
There is a siphon pipe inside, so the cylinder need not be upside-down to fill with liquid.
Filling other cylinders
Turn the cylinder upside-down when filling.

- Be sure to use the R410A tools to ensure pressure and to prevent foreign objects entering.

7. Refrigerant Piping Work

7-1 Cautions on Pipe Handling

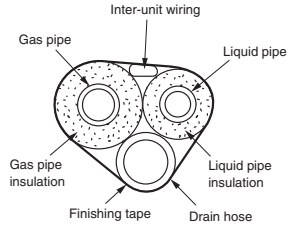
1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending. (Bending radius should be 1 1/4" to 1 5/8" mm or larger.)



7-2 Selection of Copper and Heat Insulation materials

When using commercial copper pipes and fittings, observe the following:

1) Insulation material: Polyethylene foam
   Heat transfer rate: 0.041 to 0.052 kW/mK (0.024-0.030 Btu/fth°F)
   Refrigerant gas pipe's surface temperature reaches 230°F max.
   Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.



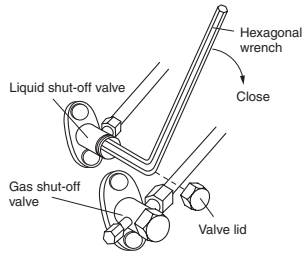
Gas side	Liquid side	Gas pipe thermal insulation	Liquid pipe thermal insulation
09/12 class		09/12 class	
O.D. 3/8"	O.D. 1/4"	I.D. 1/2"-2/3"	I.D. 1/3"-1/2"
Thickness 1/32"		Thickness 1/3" minimum	

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Pump Down Operation

In order to protect the environment, be sure to pump down when relocating or disposing of the unit.

1) Remove the valve lid from liquid shut-off valve and gas shut-off valve.
2) Carry out forced cooling operation.
3) After five to ten minutes, close the liquid shut-off valve with a hexagonal wrench.
4) After two to three minutes, close the gas shut-off valve and stop forced cooling operation.



How to force cooling operation mode

■ **Using the indoor unit operation/stop button**

Press the indoor unit operation/stop button for at least five seconds. (Operation will start.)

- Forced cooling operation will stop automatically after around 15 minutes. To force a test run to stop, press the indoor unit operation/stop button.

■ **Using the main unit's remote control**

1) Press the "operation/stop" button. (Operation will start.)
2) Press the temperature ▲▼ button and the "operation select" button at the same time.
3) Press the "operation select" button twice. (𝒯 will be displayed and the unit will enter test run mode.)
4) Press the "operation select" button to return the operation mode to cooling.

- Test run mode will stop automatically after around 30 minutes. To force a test run to stop, press the operation/stop button.

⚠ Caution

After closing the liquid shut-off valve, close the gas shut-off valve within three minutes, then stop the forced operation.

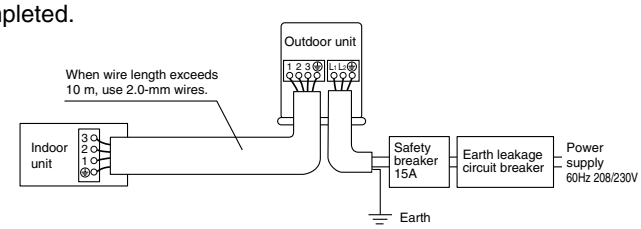
Wiring

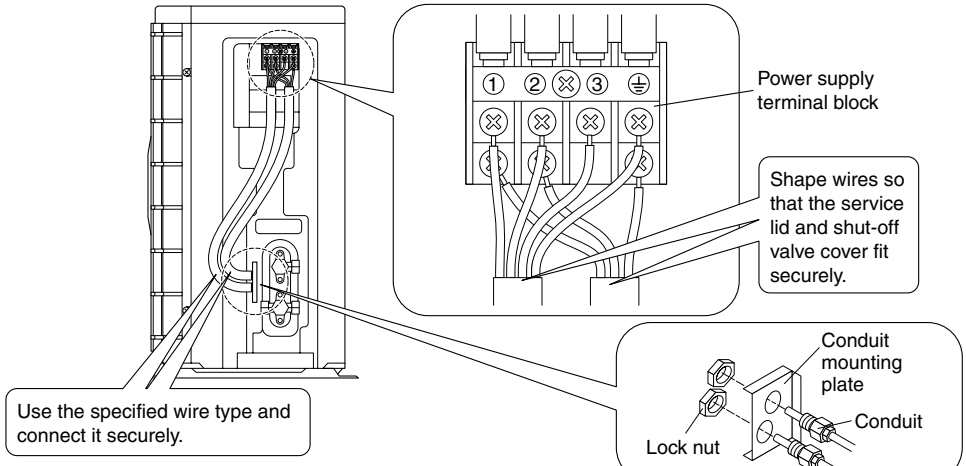
⚠ Warning

1) Do not use spliced wires, stand wires, extension cords, or starbust connections, as they may cause overheating, electrical shock, or fire. Follow all Local, and State electrical codes.
2) Do not use locally purchased electrical parts inside the product. (Do not overload the circuit by adding drain pump or other electrical equipment to unit terminals.) Doing so may cause electric shock or fire.
3) Be sure to install an earth leak detector. (One that can handle higher harmonics.)
(This unit uses an inverter, which means that it must be used an earth leak detector capable handling harmonics in order to prevent malfunctioning of the earth leak detector itself.)
4) When carrying out wiring connection, take care not to pull at the conduit.

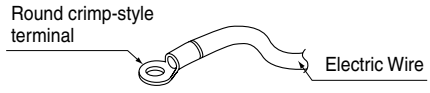
Do not turn ON the safety breaker until all work is completed.

1) Strip the insulation from the wire (3/4 in).
2) Connect the connection wires between the indoor and outdoor units **so that the terminal numbers match**. Tighten the terminal screws securely. We recommend a flathead screwdriver be used to tighten the screws.
The screws are packed with the terminal board.



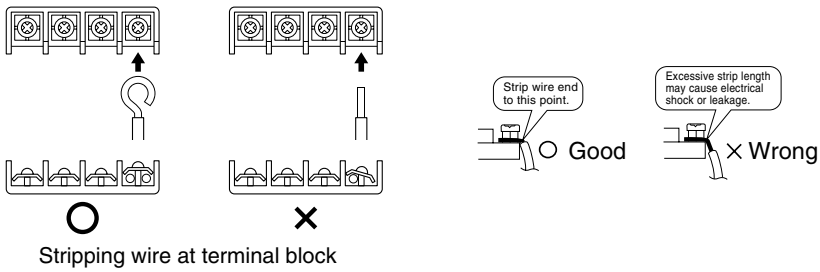

Power supply terminal block
Shape wires so that the service lid and shut-off valve cover fit securely.
Conduit mounting plate
Conduit
Lock nut
Use the specified wire type and connect it securely.

Observe the notes mentioned below when wiring to the power supply terminal board.
Precautions to be taken for power supply wiring.
(Use a round crimp-style terminal for connection to the power supply terminal board. In case it cannot be used due to unavoidable reasons, be sure to observe the following instruction.)



⚠ Caution

When connecting the connection wires to the terminal board using a single core wire, be sure to perform curling. Problems with the work may cause heat and fires.



3) Pull the wire and make sure that it is tight. Then fix the wire in place with a strain relief.

Run Test and Final Check

1. Trial Operation and Testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.

1-2 Trial operation should be carried out in eitr cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1) Trial operation may be disabled in either mode depending on the room temperature.
  2) After trial operation is complete, set the temperature to a normal level (78°F to 82°F in cooling mode, 68°F to 75°F in heating mode).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, such as louver movement, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

2. Test Items.

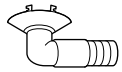
Test Items	Symptom (diagnostic display on RC)	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Drain line is properly installed.	Water leakage	
System is properly ground to earth.	Electrical leakage	
The specified wires are used for interconnecting wire connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Shut-off valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote control commands.	Inoperative	

3P141697-3G

11.2.3 15/18/24 Class

Accessories

Accessories supplied with the outdoor unit:

(A) Installation manuals	1	(B) Drain plug (Heat pump-Models)  Located on the bottom of the packing case.	1

Precautions for Selecting the Location

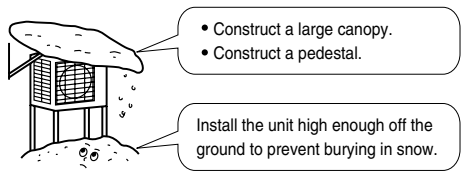
1) Choose a place strong enough to bear the weight and vibration of the unit, The location should not amplified the unit noise.
2) Choose a location where the hot air discharged from the unit and the operationing noise will not be a nuisance to the neighbors.
3) Avoid noise sensitive locations such as bedrooms to avoid future problems.
4) There must be sufficient clearance for carrying the unit into and out of the site.
5) There must be sufficient space around the air inlet and the air outlet with no obstructions to airflow.
6) The surrounding area must be free from the possibility of flammable gas leakage.
7) Install units, power cords and inter-connecting cables at least 10 feet away from television and radio sets. This is to prevent interference to images and sounds. (Noises may be heard even if they are more than 10 feet away depending on radio wave conditions.)
8) In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the air conditioner.
9) Do not place moisture sensitive equipment or articles under the outdoor unit condenstate drain.

NOTE
Do not install unit by hanging from a ceiling or stacking units.

⚠ Caution

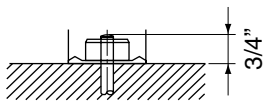
When operating the air conditioner in a outdoor temperature below, be sure to follow the instructions described below.

1) To prevent exposure to wind, install the outdoor unit with its suction side facing the wall.
2) Never install the outdoor unit at a site where the suction side may be exposed directly to wind.
3) To prevent exposure to wind, it is recommended to install a baffle plate on the air discharge side of the outdoor unit.
4) In heavy snowfall areas, select an installation site where the snow will not affect the unit.



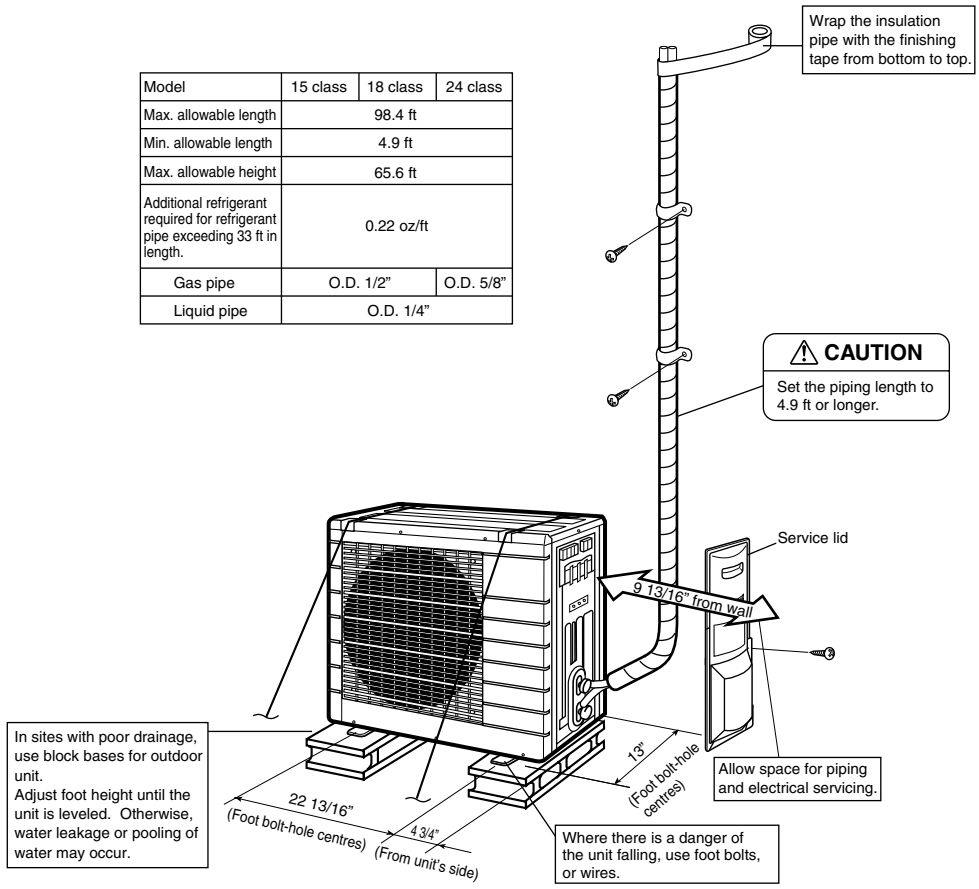
Precautions on Installation

- Ensure the strength and level of the installation will not cause any operating vibration or noise after installed.
- In accordance with the foundation drawing, fix the unit securely by means of the foundation bolts. (Prepare four sets of 3/8” or 7/16” foundation bolts, nuts and washers each which are available on the market.)
- It is best to screw in the foundation bolts until their length are 3/4” from the foundation surface.



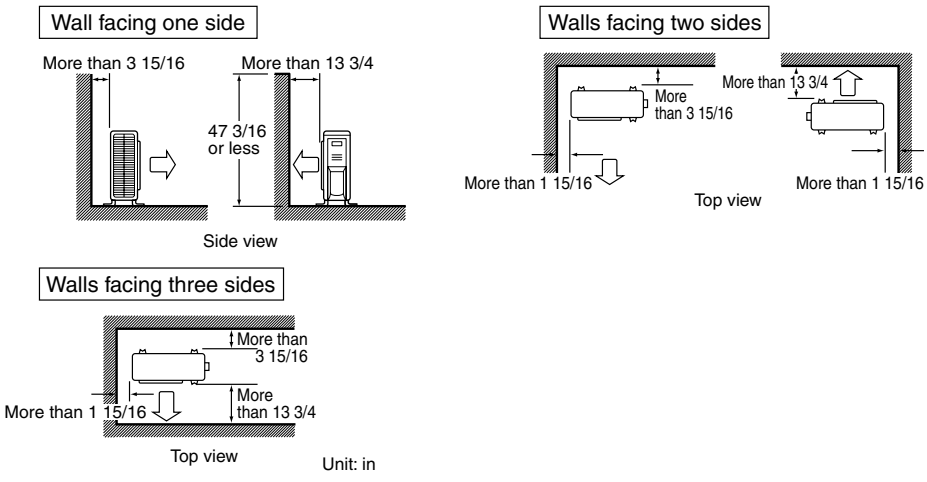
Outdoor Unit Installation Drawings

Model	15 class	18 class	24 class
Max. allowable length	98.4 ft		
Min. allowable length	4.9 ft		
Max. allowable height	65.6 ft		
Additional refrigerant required for refrigerant pipe exceeding 33 ft in length.	0.22 oz/ft		
Gas pipe	O.D. 1/2"		O.D. 5/8"
Liquid pipe	O.D. 1/4"		


Wrap the insulation pipe with the finishing tape from bottom to top.
CAUTION
Set the piping length to 4.9 ft or longer.
Service lid
9 13/16" from wall
In sites with poor drainage, use block bases for outdoor unit.
Adjust foot height until the unit is leveled. Otherwise, water leakage or pooling of water may occur.
22 13/16" (Foot bolt-hole centres)
4 3/4" (From unit's side)
13" (Foot bolt-hole centres)
Allow space for piping and electrical servicing.
Where there is a danger of the unit falling, use foot bolts, or wires.

Installation Guidelines

- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the exhaust side should be 4 ft or less.



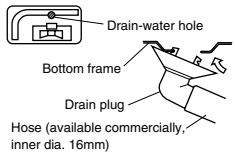
Outdoor Unit Installation

1. Installing Outdoor Unit

1) When installing the outdoor unit, refer to “Precautions for Selecting the Location” and the “Outdoor Unit Installation Drawings.”
2) If drain work is necessary, follow the procedures below.

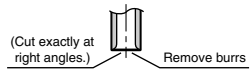
2. Drain Work

1) Use drain plug for drainage.
2) If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 1 1/4” in height under the outdoor unit’s feet.
3) In cold areas, do not use a drain hose with the outdoor unit. (Otherwise, drain water may freeze, impairing heating performance.)



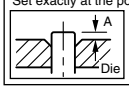
3. Flaring the Pipe End

1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.



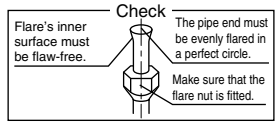
Flaring

Set exactly at the position shown below.



	Flare tool for R-410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0 ~ 0.020”	0.039 ~ 0.059”	0.059 ~ 0.079”

Check

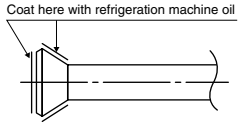

Flare’s inner surface must be flaw-free.
The pipe end must be evenly flared in a perfect circle.
Make sure that the flare nut is fitted.

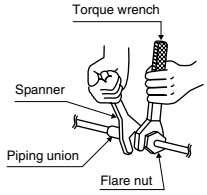
⚠ Warning

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the unit life.
3) Never use piping which has been used for previous installations. Only use parts which are provided with the unit.
4) Do never install a refrigerant drier to this unit.
5) The drying material may dissolve and damage the system.
6) Incomplete or improper flaring may cause refrigerant gas leakage.

4. Refrigerant Piping

1) Align the centers of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   • Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.
2) To prevent gas leakage, apply refrigeration machine oil on both inner and outer surfaces of the flare. (Use refrigeration oil for R410A)





Flare nut tightening torque		
Gas side		Liquid side
1/2 inch	5/8 inch	1/4 inch
36.5~44.5ft • lbf	45.6~55.6ft • lbf	10.4~12.7ft • lbf

Valve cap tightening torque		
Gas side		Liquid side
1/2 inch	5/8 inch	1/4 inch
35.5~44.0ft • lbf	32.5~39.7ft • lbf	15.9~20.2ft • lbf

Service port cap tightening torque	7.9~10.8ft • lbf

Outdoor Unit Installation

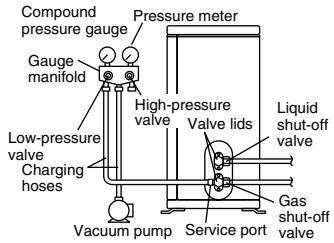
5. Purging Air and Checking for Gas Leakage

- When the piping work is completed, it is necessary to purge the air and check for gas leakage.

⚠ Warning

1) Do not place any substance other than the specified refrigerant (R410A) into the refrigeration cycle.
2) When a refrigerant gas leak occurs, ventilate the room as soon and as much as possible.
3) R410A, as well as other refrigerants, should always be recovered and never be released directly into the environment.
4) Use a vacuum pump for R410A exclusively. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.

- If adding additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump before charging additional refrigerant.
- Use a hexagonal wrench (3/16") to operate the shut-off valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench to the specified tightening torque.



1) Connect projection side (on which worm pin is pressed) of charging hose (which comes from gauge manifold) to gas shut-off valve's service port.

↓

2) Fully open gauge manifold's low-pressure valve (Lo) and completely close its high-pressure valve (Hi). (High-pressure valve subsequently requires no operation.)

↓

3) Do vacuum pumping and make sure that the vacuum pressure gauge reads – 29.9 inHg *1.

↓

4) Close gauge manifold's low-pressure valve (Lo) and stop vacuum pump. (Keep this state for a few minutes to make sure that the vacuum pressure gauge pointer does not swing back.)*2.

↓

5) Remove valve lids from liquid shut-off value and gas shut-off valve.

↓

6) Turn the liquid shut-off valve's rod 90 degrees counterclockwise with a hexagonal wrench to open valve. Close it after 5 seconds, and check for gas leakage. Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods. After the check is complete, wipe all soapy water off.

↓

7) Disconnect charging hose from gas shut-off valve's service port, then fully open liquid and gas shut-off valves. (Do not attempt to turn valve rod beyond its stop.)

↓

8) Tighten valve lids and service port cap for the liquid and gas shut-off valves with a torque wrench at the specified torques.

*1. Pipe length vs. vacuum pump run time

Pipe length	Up to 50 feet	More than 50 feet
Run time	Not less than 10 min.	Not less than 15 min.

*2. If the vacuum pressure gauge pointer swings back, refrigerant may have water content or a loose pipe joint may exists. Check all pipe joints and retighten nuts as needed, then repeat steps 2) through 4).

Outdoor Unit Installation

6. Refilling The Refrigerant

Check the type of refrigerant to be used on the machine nameplate.

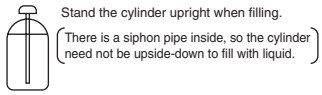
Precautions when adding R410A

Fill from the liquid pipe in liquid form.

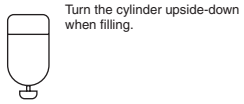
It is a mixture of refrigerant, so adding it in gas form may cause the refrigerant composition to change, preventing normal operation.

1) Before filling, check whether the cylinder has a siphon attached or not. (It should have something like "liquid filling siphon attached" displayed on it.)

Filling a cylinder with an attached siphon


Stand the cylinder upright when filling.
There is a siphon pipe inside, so the cylinder need not be upside-down to fill with liquid.

Filling other cylinders

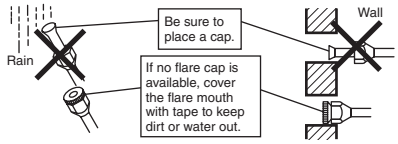


- Be sure to use the R410A tools to ensure pressure and to prevent foreign objects entering.

7. Refrigerant Piping Work

7-1 Cautions on Pipe Handling

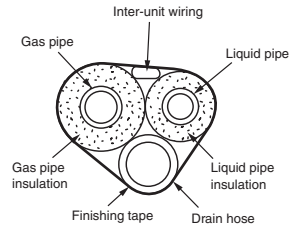
1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending. (Bending radius should be 1 1/4" to 1 5/8" or larger.)



7-2 Selection of Copper and Heat Insulation materials

When using commercial copper pipes and fittings, observe the following:

1) Insulation material: Polyethylene foam
   Heat transfer rate: 0.041 to 0.052 W/mK (0.024-0.030 Btu/fth°F)
   Refrigerant gas pipe's surface temperature reaches 230°F max.
   Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.



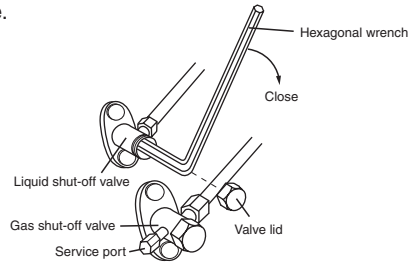
Gas side		Liquid side	Gas pipe thermal insulation		Liquid pipe thermal insulation
15/18 class	24 class	15/18/24 class	15/18 class	24 class	15/18/24 class
O.D. 1/2"	O.D. 5/8"	O.D. 1/4"	I.D. 1/2-5/8"	I.D. 5/8"-2/3"	I.D. 1/3-1/2"
Thickness 1/32"	Thickness 1/20"	Thickness 1/32"	Thickness 1/3" minimum		

- Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Pump Down Operation

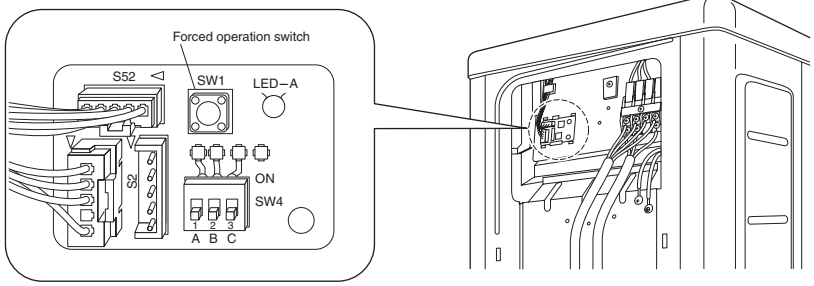
In order to protect the environment, be sure to pump down when relocating or disposing of the unit.

1) Remove the valve lids from liquid shut-off valve and gas shut-off valve.
2) Carry out forced cooling operation.
3) After five to ten minutes, close the liquid shut-off valve with a hexagonal wrench.
4) After two to three minutes, close the gas shut-off valve and stop forced cooling operation.



Forced cooling operation

1) Press the Forced Operation switch (SW1) to begin forced cooling. Press the Forced Operation switch (SW1) again to stop forced cooling.

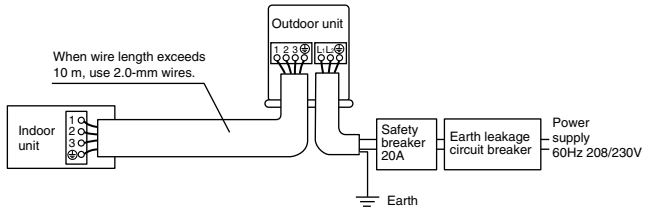


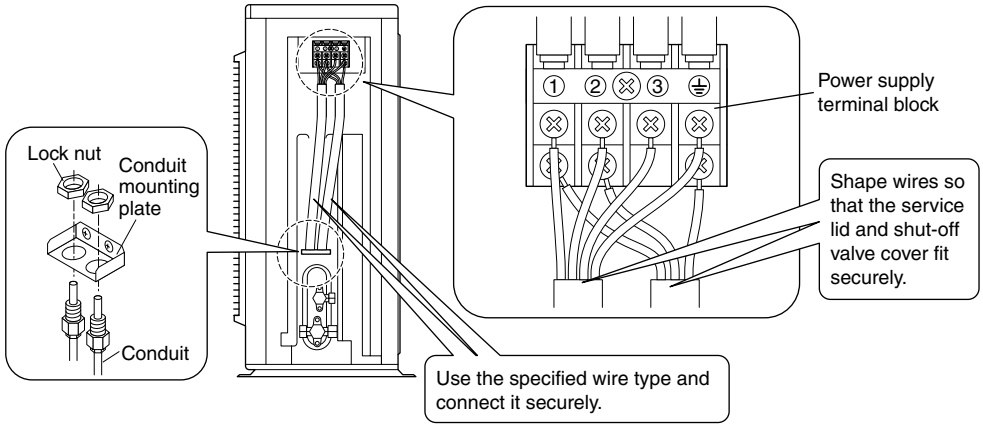
Wiring

⚠ Warning

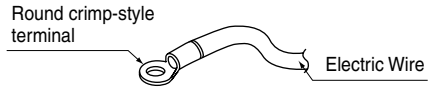
1) Do not use spliced wires, stand wires, extension cords, or starbust connections, as they may cause overheating, electrical shock, or fire. Follow all Local, and State electrical codes.
2) Do not use locally purchased electrical parts inside the product. (Do not overload the circuit by adding drain pump or other electrical equipment to unit terminals.) Doing so may cause electric shock or fire.
3) Be sure to install an earth leak detector. (One that can handle higher harmonics.)
(This unit uses an inverter, which means that it must be used an earth leak detector capable handling harmonics in order to prevent malfunctioning of the earth leak detector itself.)
4) When carrying out wiring connection, take care not to pull at the conduit.

- Do not turn ON the safety breaker until all work is completed.
  1) Strip the insulation from the wire (3/4 in).
  2) Connect the connection wires between the indoor and outdoor units **so that the terminal numbers match**. Tighten the terminal screws securely. We recommend a flathead screwdriver be used to tighten the screws.
  The screws are packed with the terminal board.



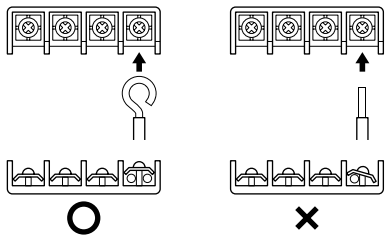

Lock nut
Conduit mounting plate
Conduit
Power supply terminal block
Shape wires so that the service lid and shut-off valve cover fit securely.
Use the specified wire type and connect it securely.

Observe the notes mentioned below when wiring to the power supply terminal board.
Precautions to be taken for power supply wiring.
(Use a round crimp-style terminal for connection to the power supply terminal board. In case it cannot be used due to unavoidable reasons, be sure to observe the following instruction.)

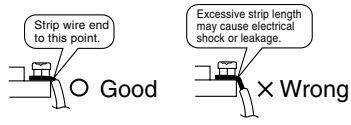


⚠ Caution

When connecting the connection wires to the terminal board using a single core wire, be sure to perform curling. Problems with the work may cause heat and fires.



Stripping wire at terminal block



3) Pull the wire and make sure that it is tight. Then fix the wire in place with a strain relief.

Run Test and Final Check

1. Trial Operation and Testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1) Trial operation may be disabled in either mode depending on the room temperature.
  2) After trial operation is complete, set the temperature to a normal level (78°F to 82°F in cooling mode, 68°F to 75°F in heating mode).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

2. Test Items.

Test Items	Symptom	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Drain line is properly installed.	Water leakage	
System is properly ground to earth.	Electrical leakage	
The specified wires are used for interconnecting wire connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Shut-off valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote control commands.	Inoperative	

3P141697-4G

12. Operation Manual

12.1 Safety precautions

Safety precautions

- Keep this manual where the operator can easily find it.
- Read this manual carefully before starting the unit.
- For safety reason, the operator must read the following cautions carefully.
- This manual classifies precautions into WARNINGS and CAUTIONS. Be sure to follow all precautions below: they are all important for ensuring safety.

⚠ WARNING	⚠ CAUTION
If you do not follow these instructions exactly, the unit may cause property damage, personal injury or loss of life.	If you do not follow these instructions exactly, the unit may cause minor or moderate property damage or personal injury.

Never do.

Be sure to follow the instructions.

Be sure to ground the air conditioner.

Never cause the air conditioner (including the remote controller) to get wet.

Never touch the air conditioner (including the remote controller) with a wet hand.

⚠ WARNING

- In order to avoid fire, explosion or injury, do not operate the unit when in a harmful environment, among which flammable or corrosive gases, are detected near the unit.
- It is not good for health to expose your body to the airflow for a long time.
- Do not put your finger, a rod or other objects into the air outlet or inlet. As the fan is rotating at a high speed and could, cause injury. Always keep small children away from the unit during operation.
- Do not attempt to repair, relocate, modify or reinstall the air conditioner by yourself. Incorrect work or modifications could cause electric shocks, fire or other damage.
  For repairs and reinstallation, consult your Daikin dealer for advice and information.

- The refrigerant used in the air conditioner is safe. Although leaks should not occur, if for some reason any refrigerant happens to leak into the room, make sure it does not come in contact with any flame such as gas heaters, kerosene heaters or gas range.
- If the air conditioner is not cooling (heating) properly, the refrigerant may be leaking, contact your authorized dealer or qualified service repairman.
  When making repairs which requires adding refrigerant, consult with your authorized dealer or qualified service repairman.
- Do not attempt to install the air conditioner by yourself. Improper installation could result in water leakage, electric shocks or fire. For installation, consult your authorized dealer or a qualified technician.
- If you detect any abnormal smell or fire, stop the operation and turn off the breaker in order to avoid electric shock, fire or injury. And call your authorized dealer for instructions.

⚠ CAUTION

- The air conditioner must be grounded to the earth. Improper grounding may result in electric shocks. Do not connect the earth grounding wire to a gas pipe, water pipe, lightning rod, or a telephone ground line. Follow all local and state electrical codes.

- Do not use this unit for cooling precision instruments, food, plants, animals or works of art.
- Never expose little children, plants or animals directly to the airflow.
- Do not place appliances which produce an open flame in places exposed to the airflow from the unit or under the indoor unit. It may cause incomplete combustion of appliances or deformation of the indoor unit due to heat.
- Do not block air inlets or outlets. Impaired airflow may result in poor performance or equipment problems.
- Do not stand, sit, or place objects on the outdoor unit. To avoid injury, do not remove the fan guard.

- Do not place anything under the indoor or outdoor unit that must be kept away from moisture, such as electrical or electronic equipment. In certain conditions, moisture in the air may condense and drip.
- Check the unit stand and fittings for damage annually.
- Do not touch the air inlet and aluminum fins of outdoor unit. It may cause injury and/or damage the heat transfer surface.
- This appliance is NOT intended for use by young children or impaired persons without proper supervision.
- Young children should be supervised to ensure that they DO NOT play with or near the airflow of this appliance.
- Do not pull at the conduit or hang anything on it. Otherwise it will cause fire or electric shock.
- Do not touch the heat exchanger fins. Improper handling may result in injury.
- Do not turn off the power immediately after stopping operation. Always wait at least five minutes before turning off the power. Otherwise, water leakage and trouble may occur.

- To avoid oxygen deficiency, ventilate the room sufficiently if equipment with a burner is used together with the air conditioner.

- To avoid personal injury or equipment damage be sure to stop the operation, turn the breaker off or pull out the supply cord before cleaning or servicing the unit. NOTE: More than one disconnect may be required to shut off all power.
- Do not connect the air conditioner to a power supply different from the one specified. It may cause improper operation or fire.
- Depending on the environment, state and local electrical codes, a ground fault circuit interrupter may be required. Improper grounding or lack of a ground fault circuit interrupter may result in electrical shock, injuries, or death.
- Arrange the drain hose to ensure smooth drainage. Improper drainage may cause water damage to the building, or it's furnishing.
- Depending on the usage environment, water may leak from the air conditioner. If this happens, contact your Daikin Dealer.
- Safely dispose of the packing materials. Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- The remote controller should be installed in such away that children cannot play with it.
- Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.
  Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smoke or fire when making contact with electrical parts.

- Do not operate the air conditioner with wet hands.

- Do not wash the indoor unit with excessive water, only use a slightly wet cloth.
- Do not place things such as vessels containing water or anything else on top of the unit. Water may penetrate into the unit and degrade electrical insulations, resulting in an electric shock.

Installation site.

■ To install the air conditioner in the following types of environments, consult your authorizede dealer.
- Places with an oily ambient or where steam or soot occurs.
- Salty environment such as coastal areas.
- Places where sulfide gas occurs such as hot springs.
- Places where snow may block the outdoor unit.

The drain from the outdoor unit must be discharged to a place of good drainage.

Consider nuisance to your neighbors from noises.

■ For installation, choose a place as described below.
- A place solid enough to bear the weight of the unit which does not amplify the operation noise or vibration.
- A place from where the air discharged from the outdoor unit or the operation noise will not annoy your neighbors.

Electrical work.

- For power supply, be sure to use a separate power circuit dedicated to the air conditioner. Follow all local and state electrical codes.

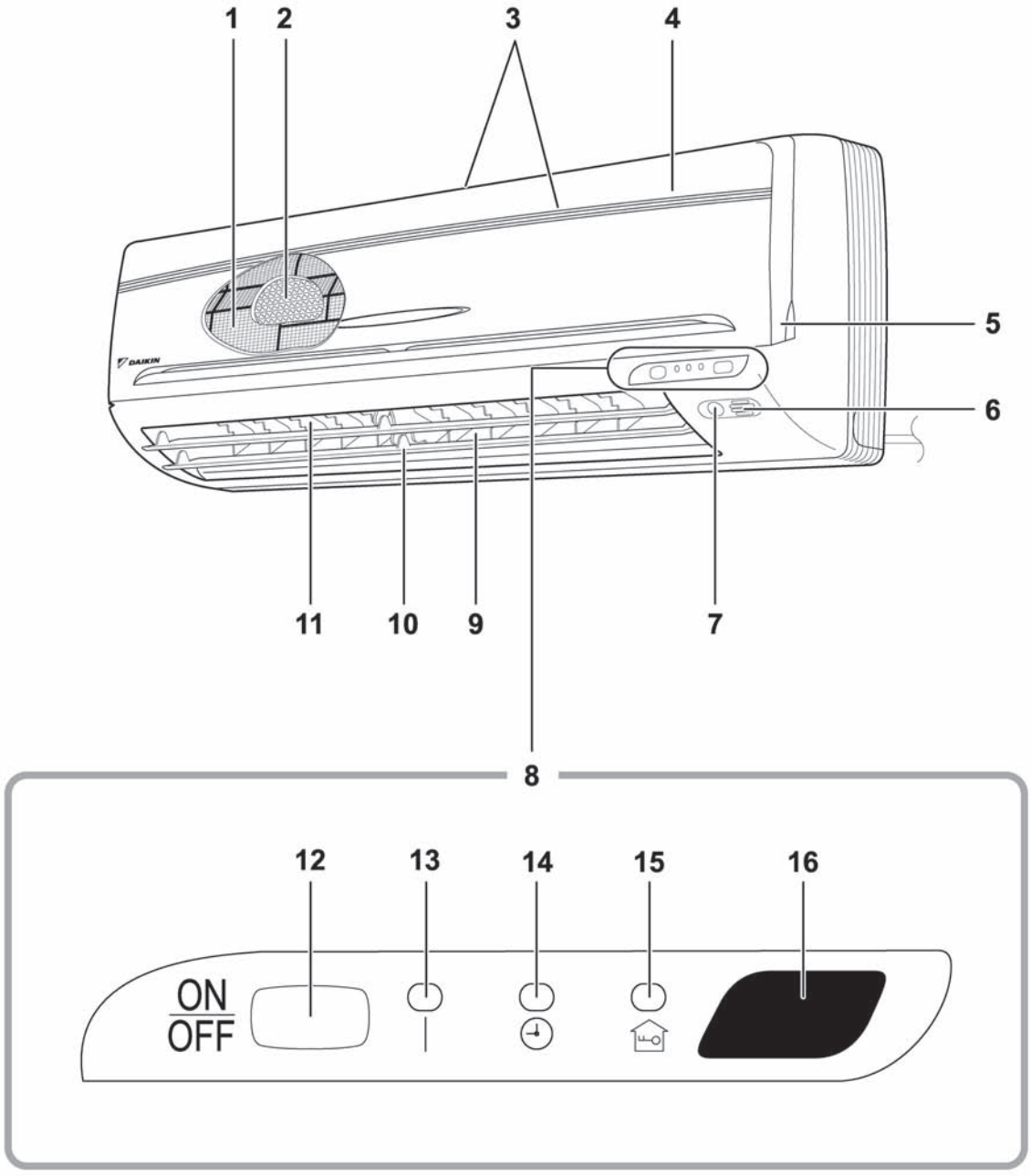
System relocation.

- Relocating the air conditioner requires specialized knowledge and skills. Please consult your authorized dealer if relocation is necessary for moving or remodeling.

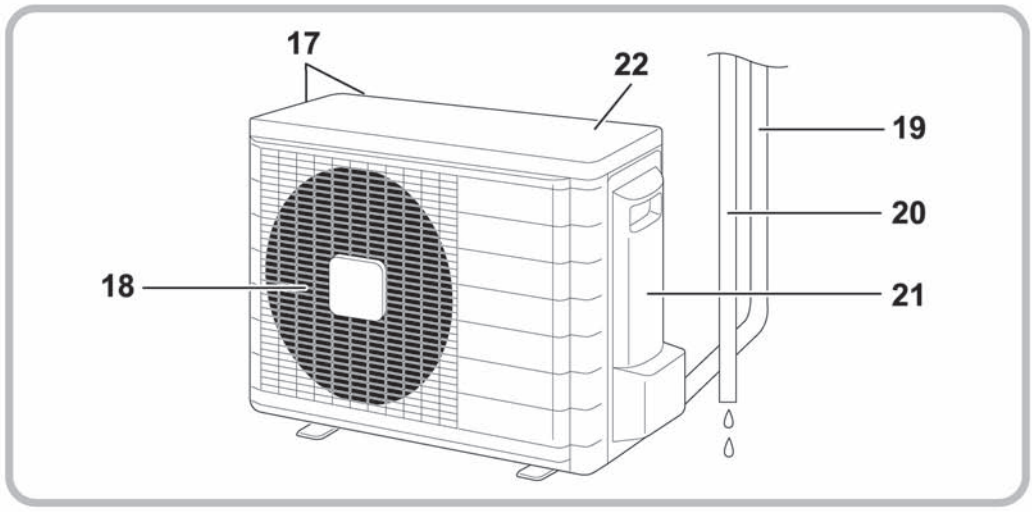
12.2 09/12 Class

Names of parts

■ Indoor Unit



■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Air-purifying filter with photocatalytic deodorizing function:**
   - These filters are attached to the inside of the air filters.
3. **Air inlet**
4. **Front panel**
5. **Panel tab**
6. **Room temperature sensor:**
   - It senses the air temperature around the unit.
7. **INTELLIGENT EYE sensor:**
   - It detects the movements of people and automatically switches between normal operation and energy saving operation. (page 18.)
8. **Display**
9. **Air outlet**
10. **Flaps (horizontal blades):** (page 12.)
11. **Louvers (vertical blades):**
    - The louvers are inside of the air outlet. (page 13.)
12. **Indoor Unit ON/OFF switch:** (page 10.)
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refers to the following table.

Mode	Temperature setting	Airflow rate
AUTO	77°F	AUTO

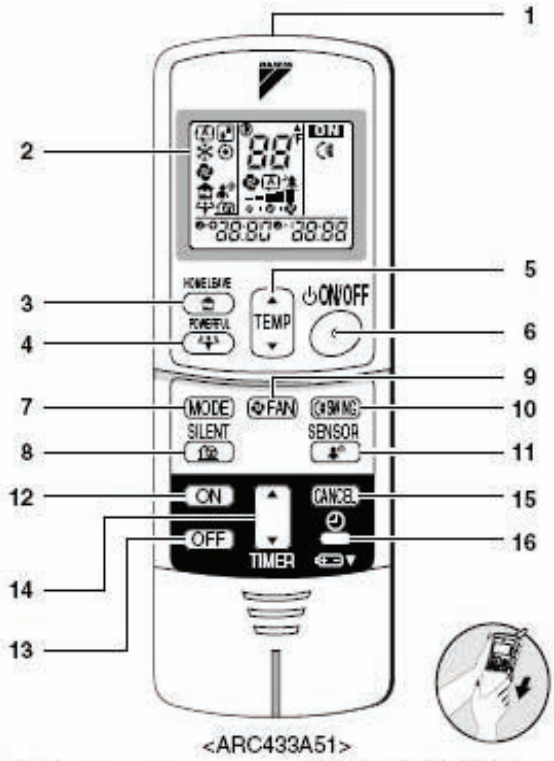
    - This switch is useful when the remote controller is missing.
13. **Operation lamp (green)**
14. **TIMER lamp (yellow):** (page 20.)
15. **HOME LEAVE lamp (red):** (page 16.)
16. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

17. **Air inlet:** (Back and side)
18. **Air outlet**
19. **Refrigerant piping and inter-unit cable**
20. **Drain hose**
21. **Earth grounding terminal:**
    - It is inside of this cover.
22. **Outside air temperature sensor:**
    - It senses the ambient temperature around the unit.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



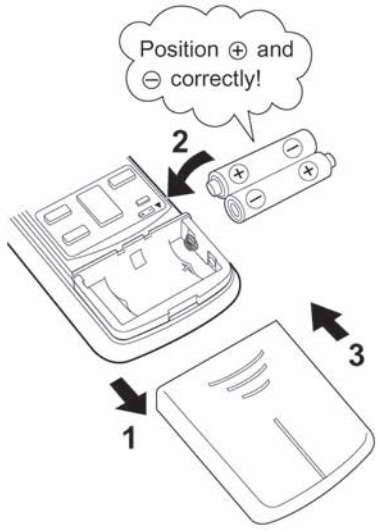
<ARC433A51>

1. Signal transmitter:
   • It sends signals to the indoor unit.
2. Display:
   • It displays the current settings.
   (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. HOME LEAVE button:
   HOME LEAVE operation (page 16.)
4. POWERFUL button: (Maximum operation)
   POWERFUL operation (page 14.)
5. TEMPERATURE adjustment buttons:
   • It changes the temperature setting.
6. ON/OFF button:
   • Press this button once to start operation. Press once again to stop it.
7. MODE selector button:
   • It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN) (page 10.)
8. SILENT button: OUTDOOR UNIT SILENT operation (page 15.)
9. FAN setting button:
   • It selects the airflow rate setting.
10. SWING button: (page 12.)
11. SENSOR button: INTELLIGENT EYE operation (page 18.)
12. ON TIMER button: (page 21.)
13. OFF TIMER button: (page 20.)
14. TIMER Setting button:
    • It changes the time setting.
15. TIMER CANCEL button:
    • It cancels the timer setting.
16. CLOCK button: (page 9.)

Preparation Before Operation

■ To set the batteries

1. **Slide the front cover to take it off.**
2. **Set two dry batteries (AAA).**
3. **Set the front cover as before.**



ATTENTION

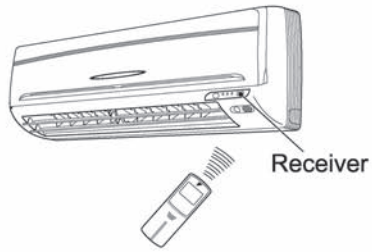
■ About batteries

- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out. In case the remote controller is not used for a long time remove all batteries in order to prevent liquid leak of the battery.
- We recommend replacing once a year, although if the remote controller display begins to fade or if reception deteriorates, please replace with new alkali batteries. Using manganese batteries reduces the lifespan.
- The attached batteries are provided for the initial use of the system.
  The usable period of the batteries may be short depending on the manufactured date of the air conditioner.
- Pressing two or more buttons simultaneously may cause the strange display of the remote controller.
  The remote controller is not malfunction. In this case take the batteries out and reset them.

Preparation Before Operation

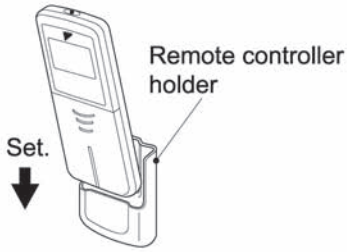
■ To operate the remote controller

- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- Do not drop the remote controller. Do not get it wet.
- The maximum distance for communication is about 23 Ft.



■ To fix the remote controller holder on the wall

1. **Choose a place from where the signals reach the unit.**
2. **Fix the holder to a wall, a pillar, etc. with the screws supplied with the holder.**
3. **Place the remote controller in the remote controller holder.**



● To remove, pull it upwards.

ATTENTION

■ About remote controller

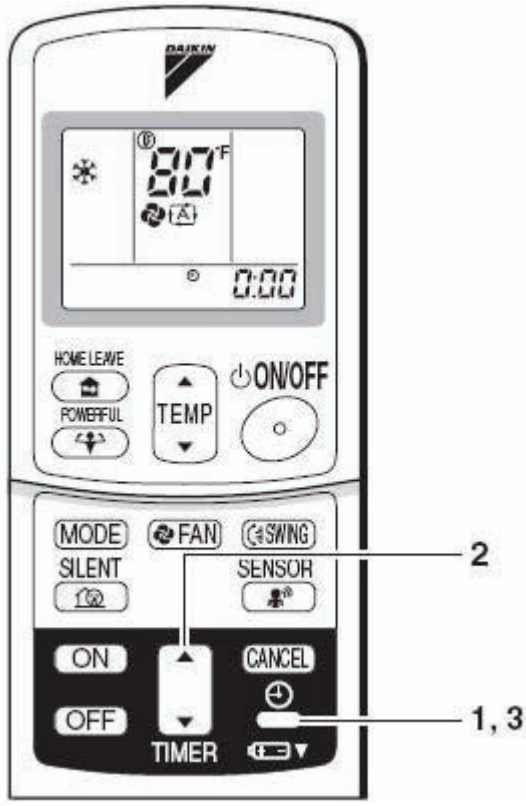
- Do not put the remote controller in the following places.
  - In direct sunlight.
  - In vicinity of a heater.
- Dust on the signal transmitter or receiver will reduce the sensitivity. Wipe off dust with soft cloth.
- Signal communication may be disabled if an electronic-starter-type fluorescent lamp (such as inverter-type lamps) is in the room. Consult your authorized dealer if that is the case.
- If the remote controller signals happen to operate another appliance, move that appliance to somewhere else, or consult your authorized dealer.

■ To set the clock

1. **Press "CLOCK button".**
   0:00 is displayed.
   ⏲ blinks.
2. **Press "TIMER setting button" to set the clock to the present time.**
   Holding down "▲" or "▼" button rapidly increases or decreases the time display.
3. **Press "CLOCK button".**
   : blinks.

■ Turn the breaker ON

- Turning ON the breaker opens the flap, then closes it again. (This is a normal procedure.)



NOTE

■ Tips for saving energy

- Be careful not to cool (heat) the room too much.
  Keeping the temperature setting at a moderate level helps save energy.
- Cover windows with a blind or a curtain.
  Blocking sunlight and air from outdoors increases the cooling (heating) effect.
- Clogged air filters cause inefficient operation and waste energy. Clean them once every two weeks.

Recommended temperature setting
For cooling: 78°F – 82°F
For heating: 68°F – 75°F

■ Please note

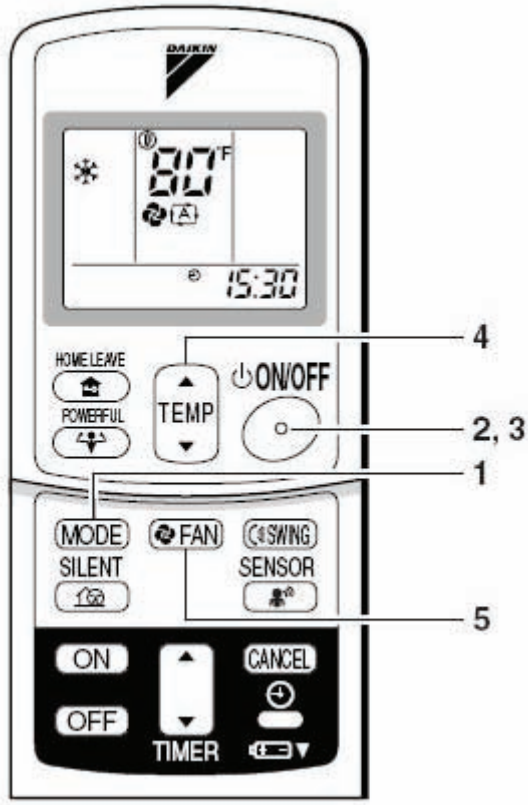
- When the main power switch is turned on, some watts of electrictly are being used even when the system is not operating.
- If you are not going to use the air conditioner for a long period, for example in spring or autumn, turn the breaker OFF to save energy.
- Use the air conditioner in the following conditions.

Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature: 14 to 115 °F Indoor temperature: 64 to 90 °F Indoor humidity: 80% max.	• A safety device may work to stop the operation under 0 °F and over 115 °F outdoor temperature. • See Note 2 for 0 °F to 14 °F operation. • Condensation may occur on the indoor unit and drip.
HEAT	Outdoor temperature: 5 to 64 °F Indoor temperature: 50 to 86 °F	• A safety device may work to stop the operation under 0 °F or over 64 °F outdoor temperature. See the Note 3 for 0 °F to 5 °F.
DRY	Outdoor temperature: 14 to 115 °F Indoor temperature: 64 to 90 °F Indoor humidity: 80% max.	• A safety device may work to stop the operation. • Condensation may occur on the indoor unit and drip.

Operation outside humidity or temperature range may cause a safety device to disable the system.
RX09/12FVJU
Note: A breaker must be turned on for 24 hours before the operation start if the ambient temperature is below 14ºF, otherwise the unit will not start smoothly.

AUTO · DRY · COOL · HEAT · FAN Operation

The air conditioner operates with the operation mode of your choice.
From the next time on, the air conditioner will operate with the same operation mode.



■ To start operation

1. Press “MODE selector button” and select a operation mode.

- Each pressing of the button advances the mode setting in sequence.

  Ⓐ: AUTO
  : DRY
  : COOL
  : HEAT
  : FAN

2. Press “ON/OFF button” .

- The OPERATION lamp lights up.

■ To stop operation

3. Press “ON/OFF button” again.

- Then OPERATION lamp goes off.

■ To change the temperature setting

4. Press “TEMPERATURE adjustment button”.

DRY or FAN mode	AUTO or COOL or HEAT mode
The temperature setting is not variable.	Press “▲” to raise the temperature and press “ ▼ ” to lower the temperature.
	Set to the temperature you like.

■ To change the airflow rate setting

5. Press "FAN setting button".

DRY mode	AUTO or COOL or HEAT or FAN mode
The airflow rate setting is not variable.	Five levels of airflow rate setting from " " to " " plus " " " " are available.

- Indoor unit quiet operation

  When the airflow is set to " ", the noise from the indoor unit will become quieter.
  Use this when making the indoor unit quieter.
  The unit might lose capacity when the airflow rate is set to a low level.

NOTE

■ Note on HEAT operation

- Since this air conditioner heats the room by taking heat from outdoor air to indoors, the heating capacity becomes smaller in lower outdoor temperatures. If the heating effect is insufficient, it is recommended to use another heating appliance in combination with the air conditioner.
- The heat pump system heats the room by circulating hot air around all parts of the room. After the start of heating operation, it takes some time before the room gets warmer.
- In heating operation, frost may occur on the outdoor unit and lower the heating capacity. In that case, the system switches into defrosting operation to take away the frost.
- During defrosting operation, hot air does not flow out of indoor unit.

■ Note on COOL operation

- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, performance drops.

■ Note on DRY operation

- The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and fan strength, so manual adjustment of these functions is unavailable.

■ Note on AUTO operation

- In AUTO operation, the system selects an appropriate operation mode (COOL or HEAT) based on the room temperature at the start of the operation.
- The system automatically reselects setting at a regular interval to bring the room temperature to user-setting level.
- If you do not like AUTO operation, you can manually select the operation mode and setting you like.

■ Note on airflow rate setting

- At smaller airflow rates, the cooling (heating) effect is also less.

Adjusting the Airflow Direction

You can adjust the airflow direction to increase your comfort.

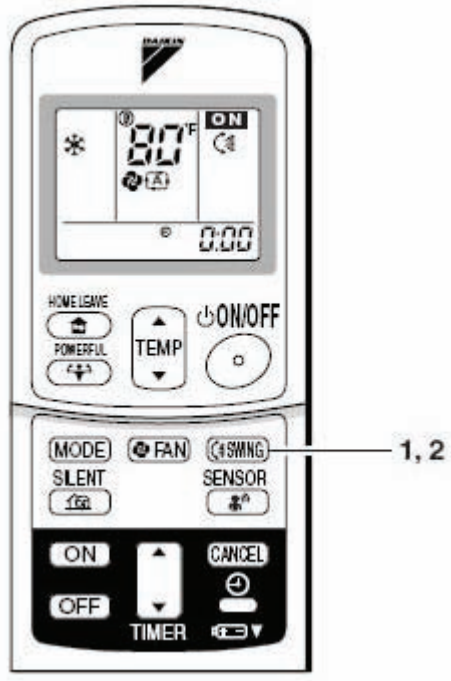
■ To adjust the horizontal blades (flaps)

1. **Press “SWING button”.**

   The display will light up and the flaps will begin to swing.

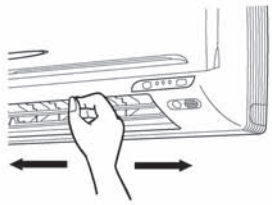
2. **When the flaps have reached the desired position, press “SWING button” once more.**

   The display will go blank.
   The flaps will stop moving.



■ To adjust the vertical blades (louvers)

Hold the knob and move the louvers.
(You will find a knob on the left-side and the right-side blades.)

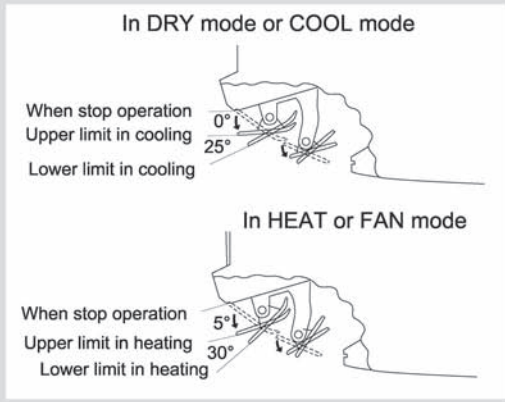


Notes on flaps and louvers angles

- When " **SWING button** " is selected, the flaps swinging range depends on the operation mode. (See the figure.)

■ ATTENTION

- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed and may cause bodily injury if fan comes in contact with fingers.



POWERFUL Operation

POWERFUL operation quickly maximizes the cooling (heating) effect in any operation mode. You can get the maximum capacity.

■ To start POWERFUL operation

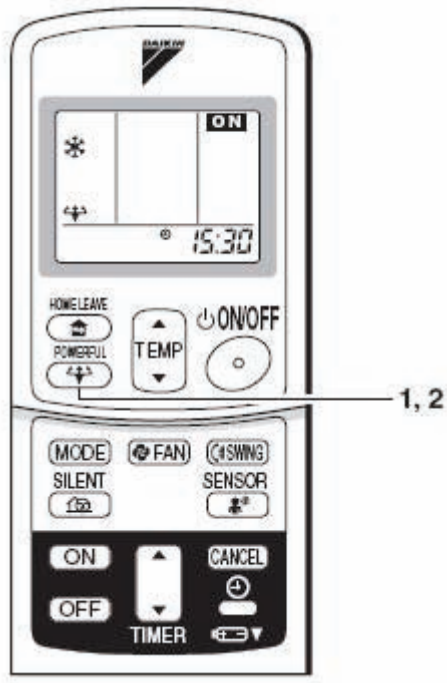
1. Press "POWERFUL button".

- POWERFUL operation ends in 20 minutes.
  Then the system automatically operates again with the settings which were used before POWERFUL operation.
- When using POWERFUL operation, there are some functions which are not available.
- "" is displayed on the LCD.

■ To cancel POWERFUL operation

2. Press "POWERFUL button" again.

- "" disappears from the LCD.



NOTE

■ Notes on POWERFUL operation

- POWERFUL Operation cannot be used together with QUIET Operation. Priority is given to the function of whichever button is pressed last.
- POWERFUL Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the "" disappears from the LCD.
- **In COOL and HEAT mode**
  To maximize the cooling (heating) effect, the capacity of outdoor unit must be increased and the airflow rate be fixed to the maximum setting.
  The temperature and airflow settings are not variable.
- **In DRY mode**
  The temperature setting is lowered by 4.5°F and the airflow rate is slightly increased.
- **In FAN mode**
  The airflow rate is fixed to the maximum setting.

OUTDOOR UNIT QUIET Operation

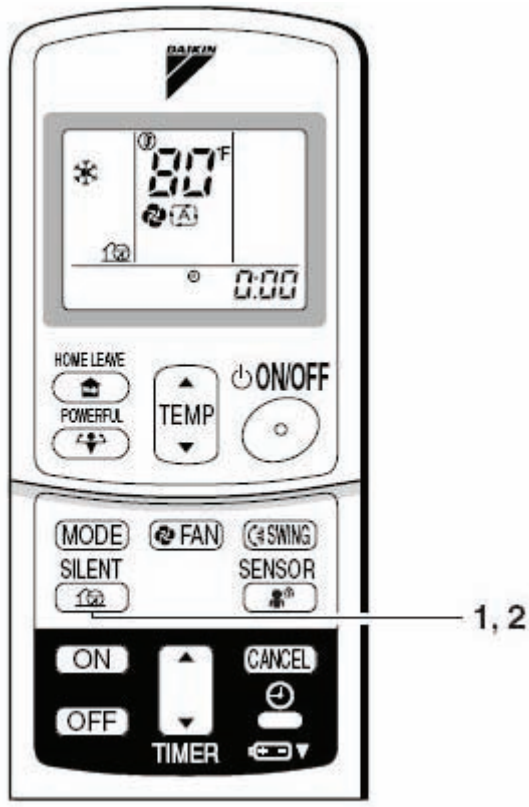
OUTDOOR UNIT QUIET operation lowers the noise level of the outdoor unit by changing the fan speed on the outdoor unit.
This function is convenient during night.

■ To start OUTDOOR UNIT QUIET operation

1. Press **SILENT** button.
   - "" is displayed on the LCD.

■ To cancel OUTDOOR UNIT QUIET operation

2. Press **SILENT** button again.
   - "" disappears from the LCD.



NOTE

■ Note on OUTDOOR UNIT QUIET operation

- This function is available in COOL, HEAT, and AUTO modes. (This is not available in FAN and DRY modes.)
- POWERFUL operation and OUTDOOR UNIT QUIET operation cannot be used at the same time. Priority is given to the function of whichever button is pressed last.
- If operation is stopped using the remote controller or the main unit ON/OFF switch when using OUTDOOR UNIT QUIET operation, " " will remain on the remote controller display.

HOME LEAVE Operation

HOME LEAVE operation is a function which allows you to record your preferred temperature and airflow rate settings.

■ To start HOME LEAVE operation

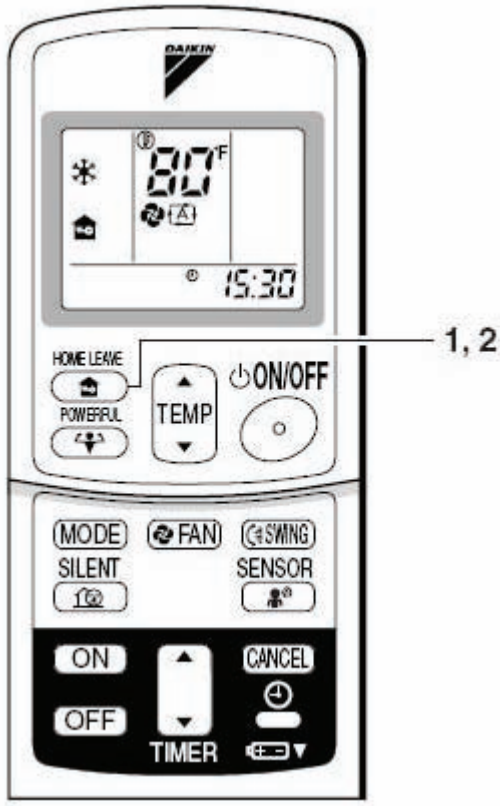
1. Press "HOME LEAVE button" .

- " " is displayed on the LCD.
- The HOME LEAVE lamp lights up.

■ To cancel HOME LEAVE operation

2. Press "HOME LEAVE button" again.

- " " disappears from the LCD.
- The HOME LEAVE lamp goes off.



Before using HOME LEAVE operation.

■ To set the temperature and airflow rate for HOME LEAVE operation

When using HOME LEAVE operation for the first time, please set the temperature and airflow rate for HOME LEAVE operation. Record your preferred temperature and airflow rate.

	Initial setting		Selectable range	
	Temperature	Airflow rate	Temperature	Airflow rate
Cooling	77°F	AUTO	64-90°F	5 step, "A" and " "
Heating	77°F	AUTO	50-86°F	5 step, "A" and " "

1. **Press "HOME LEAVE button". Make sure " " is displayed in the remote controller display.**
2. **Adjust the set temperature with "▲" or "▼" as you like.**
3. **Adjust the airflow rate with "FAN" setting button as you like.**

Home leave operation will run with these settings the next time you use the unit. To change the recorded information, repeat steps 1 – 3.

■ What's the HOME LEAVE operation?

Is there a set temperature and airflow rate which is most comfortable, a set temperature and airflow rate which you use the most? HOME LEAVE operation is a function that allows you to record your favorite set temperature and airflow rate. You can start your favorite operation mode simply by pressing the HOME LEAVE button on the remote controller. This function is convenient in the following situations.

■ Useful in these cases

1. Use as an energy-saving mode.

Set the temperature 3-5°F higher (cooling) or lower (heating) than normal. Setting the fan speed to the lowest setting allows the unit to be used in energy-saving mode. Also convenient for use while you are out or sleeping.

• Every day before you leave the house...

When you go out, push the "HOME LEAVE Operation" button, and the air conditioner will adjust capacity to reach the preset temperature for HOME LEAVE Operation.

When you return, you will be welcomed by a comfortably air conditioned room.

Push the "HOME LEAVE Operation" button again, and the air conditioner will adjust capacity to the set temperature for normal operation.

• Before bed...

Set the unit to HOME LEAVE Operation before leaving the living room when going to bed.

The unit will maintain the temperature in the room at a comfortable level while you sleep.

When you enter the living room in the morning, the temperature will be just right. Disengaging HOME LEAVE Operation will return the temperature to that set for normal operation. Even the coldest winters will pose no problem!

2. Use as a favorite mode.

Once you record the temperature and airflow rate settings you most often use, you can retrieve them by pressing HOME LEAVE button. You do not have to go through troublesome remote controller operations.

NOTE

- Once the temperature and airflow rate for HOME LEAVE operation are set, those settings will be used whenever HOME LEAVE operation is used in the future. To change these settings, please refer to the "Before using HOME LEAVE operation" section above.
- HOME LEAVE operation is only available in COOL and HEAT mode. It cannot be used in AUTO, DRY, and FAN mode.
- HOME LEAVE operation runs in accordance with the previous operation mode (COOL or HEAT) before using HOME LEAVE operation.
- HOME LEAVE operation and POWERFUL operation cannot be used at the same time. Last button that was pressed has priority.
- The operation mode cannot be changed while HOME LEAVE operation is being used.
- When operation is shut off during HOME LEAVE operation, using the remote controller or the indoor unit ON/OFF switch, " " will remain on the remote controller display.

INTELLIGENT EYE Operation

"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

■ To start INTELLIGENT EYE operation

1. Press "SENSOR button".

- " " is displayed on the LCD.

■ To cancel the INTELLIGENT EYE operation

2. Press "SENSOR button" again.

- " " disappears from the LCD.

[EX.]

When somebody is in the room

- **Normal operation.**

⇩

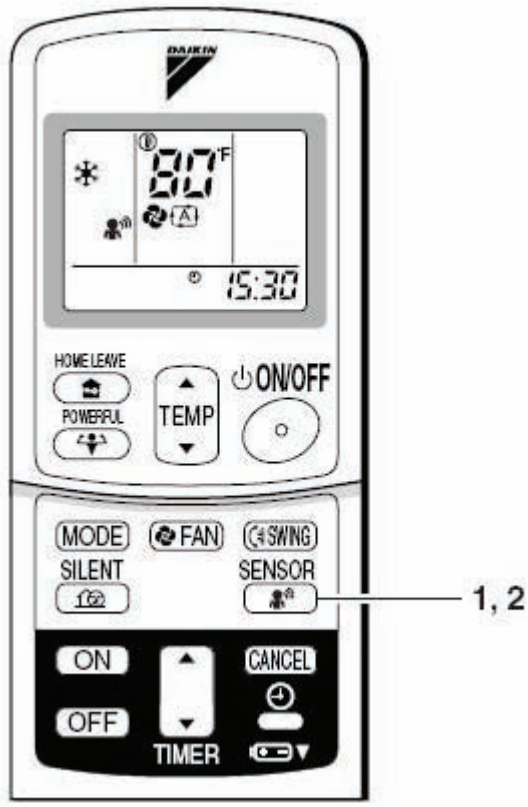
When nobody is in the room

- **20 min. after, start energy saving operation.**

⇩

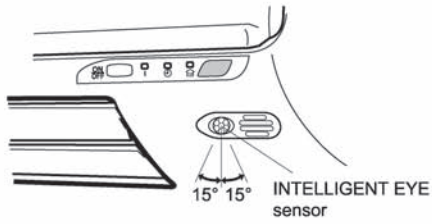
When somebody is back in the room

- **Back to normal operation.**



■ To adjust the angle of the INTELLIGENT EYE sensor

- You can adjust the angle of the INTELLIGENT EYE sensor to increase the detection area.
  (Adjustable angle: 15° to right and left of centre)



- Gently push and slide the sensor to adjust the angle.
- After adjusting the angle, wipe the sensor gently with a clean cloth, being careful not to scratch the sensor.

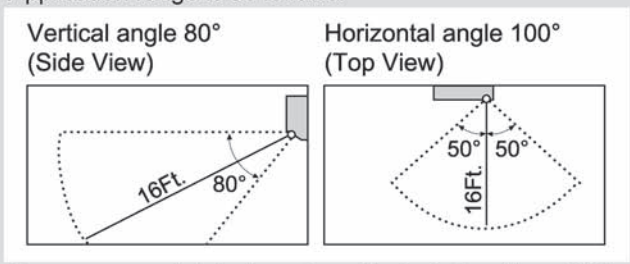
"INTELLIGENT EYE" is useful for Energy Saving.

■ Energy saving operation

- Change the temperature –3.6°F in heating / +3.6°F in cooling / +1.8°F in dry mode from set temperature.
- Decrease the airflow rate slightly in fan operation. (In FAN mode only)

Notes on "INTELLIGENT EYE"

- Application range is as follows.



- Sensor may not detect moving objects further than 16Ft. away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode (page 20.) will not go on during your use of INTELLIGENT EYE operation.

⚠CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor's detection area. This sensor can detect objects it shouldn't as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

TIMER Operation

Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning.
You can also use OFF TIMER and ON TIMER in combination.

■ To use OFF TIMER operation

- Check that the clock is correct.
  If not, set the clock to the present time. (page 9.)

1. Press "OFF TIMER button".

0:00 is displayed.
⊙·○ blinks.

2. Press "TIMER Setting button" until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

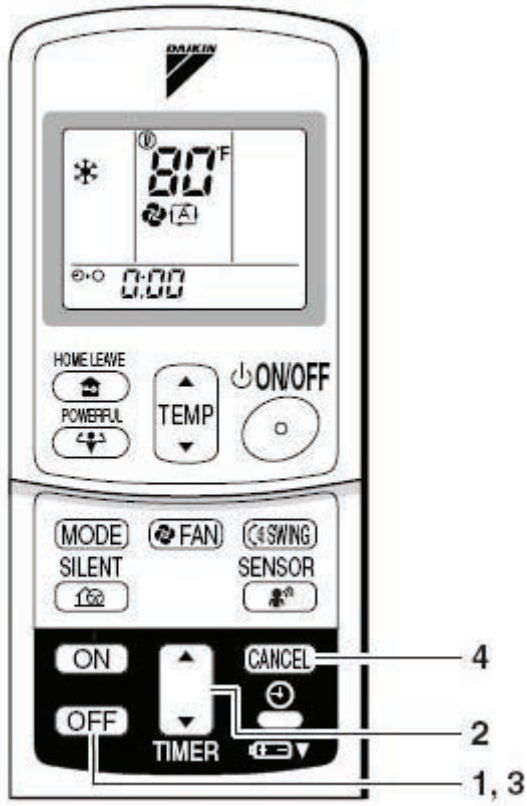
3. Press "OFF TIMER button" again.

- The TIMER lamp lights up.

■ To cancel the OFF TIMER operation

4. Press "CANCEL button".

- The TIMER lamp goes off.



NOTE

- When TIMER is set, the present time is not displayed.
- Once you set ON, OFF TIMER, the time setting is kept in the memory. (The memory is lost when remote controller batteries are replaced.)
- When operating the unit via the ON/OFF Timer, the actual length of operation may vary from the time entered by the user.

■ NIGHT SET MODE

When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (1°F up in COOL, 3.6°F down in HEAT) to prevent excessive cooling (heating) for your pleasant sleep.

■ To use ON TIMER operation

- Check that the clock is correct. If not, set the clock to the present time. (page 9.)

1. Press "ON TIMER button".

6:00 is displayed.

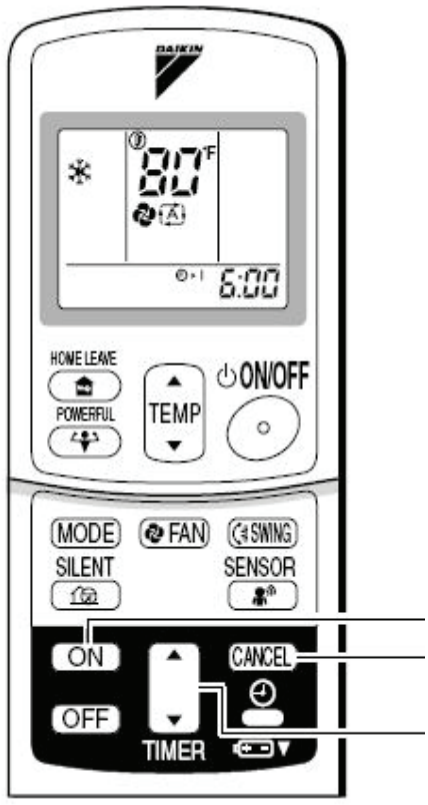
⊙▸| blinks.

2. Press "TIMER Setting button" until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press "ON TIMER button" again.

- The TIMER lamp lights up.



■ To cancel ON TIMER operation

4. Press "CANCEL button".

- The TIMER lamp goes off.

■ To combine ON TIMER and OFF TIMER

- A sample setting for combining the two timers is shown below.

(Example)
Present time: 11:00 p.m.
(The unit operating)
OFF TIMER at 0:00 a.m.
ON TIMER at 7:00 a.m.) Combined

ATTENTION

■ In the following cases, set the timer again.

- After a breaker has turned OFF.
- After a power failure.
- After replacing batteries in the remote controller.

Care and Cleaning

⚠ CAUTION **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

Units

To avoid possible bodily injury, units should be shutoff or disconnected before any cleaning or servicing is attempted.

■ Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

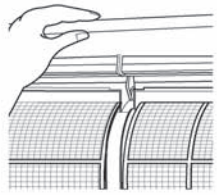
■ Front panel

1. Open the front panel.

- Hold the panel by the tabs on the two sides and lift it until it stops with a click.

2. Remove the front panel.

- Supporting the front panel with one hand, release the lock by sliding down the knob with the other hand.
- To remove the front panel, pull it toward yourself with both hands.

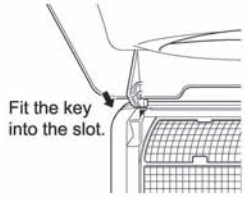


3. Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front panel.

- Set the 3 keys of the front panel into the slots and push them in all the way.
- Close the front panel slowly and push the panel at the 3 points.
  (1 on each side and 1 in the middle.)
- Check to see if the rotating axis in the upper center section is moving.



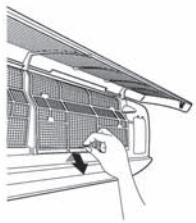
⚠ CAUTION

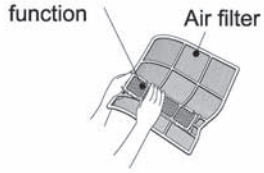
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 104 °F, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

Filters

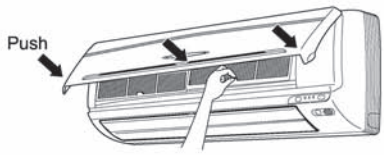
1. **Open the front panel. (page 22.)**
2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.

3. **Take off the air-purifying filter with photocatalytic deodorizing function.**
   - Hold the recessed parts of the frame and unhook the four claws.
4. **Clean or replace each filter.**
   See figure.



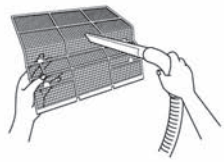


5. **Set the air filter and the air- purifying filter with photocatalytic deodorizing function as they were and close the front panel.**
   - Insert claws of the filters into slots of the front panel. Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle.)



■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Air-purifying filter with photocatalytic deodorizing function (gray)

The Air-purifying filter with photocatalytic deodorizing function can be renewed by washing it with water once every 6 months.
We recommend replacing it once every 3 years.

[Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **Do not remove filter from frame when washing with water.**
4. **After washing, shake off remaining water and dry in the shade.**
5. **Since the material is made out of paper, do not wring out the filter when removing water from it.**

[Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
   - Dispose of the old filter as flammable waste.

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded. Check the units to ensure they are level and secure.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the water drains smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult your authorized dealer.

■ Before a long idle period

1. **Operate the "FAN only" for several hours on a warm day to dry out the inside.**
   - Press "MODE selector button" and select "FAN" operation.
   - Press "ON/OFF button" and start operation.
2. **After operation stops, turn off the electrical circuit breaker for the room air conditioner.**
3. **Remove and clean the air filters. Reinstall filters after cleaning.**
4. **Take out batteries from the remote controller.**

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odor.
- To order air-purifying filter with photocatalytic deodorizing function, contact your authorized dealer where you bought the air conditioner.
- Dispose of old filters as required by local codes.

Item	Part No.
Air-purifying filter with photocatalytic deodorizing function. (with frame) 1 set	KAF918A43
Air-purifying filter with photocatalytic deodorizing function. (without frame) 1 set	KAF918A44

Trouble Shooting

Conditions that appear to be abnormal but are not operational problems.

The following cases are not abnormal problems and you may just continue using it.

Case	Explanation
Operation does not start quickly. • When ON/OFF button was pressed soon after operation was stopped. • When the mode was reselected.	• This is to protect the air conditioner. You should wait for about 3 minutes.
Hot air does not flow out soon after the start of heating operation.	• The air conditioner is warming up. You should wait for 1 to 4 minutes. (The system is designed to start discharging air only after it has reached a certain temperature.)
The heating operation stops suddenly and a flowing sound is heard.	• The system is taking away the frost on the outdoor unit. You should wait for about 3 to 8 minutes.
The outdoor unit emits water or steam.	■ In HEAT mode • The frost on the outdoor unit melts into water or steam when the air conditioner is in defrost operation. ■ In COOL or DRY mode • Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.
Mist comes out of the indoor unit.	■ This happens when the air in the room is cooled into mist by the cold airflow during cooling operation.
The indoor unit gives out odor.	■ This happens when smells of the room, furniture, or cigarettes are absorbed into the unit and discharged with the airflow. (If this happens, we recommend you to have the indoor unit washed by a technician. Consult your authorized dealer where you bought the air conditioner.)
The outdoor fan rotates while the air conditioner is not in operation.	■ After operation is stopped: • The outdoor fan continues rotating for another 60 seconds for system protection. ■ While the air conditioner is not in operation: • When the outdoor temperature is very high, the outdoor fan starts rotating for system protection.
The operation stopped suddenly. (OPERATION lamp is on.)	■ For system protection, the air conditioner may stop operating on a sudden large voltage fluctuation. It automatically resumes operation in about 3 minutes.

Check again.

Please check again before calling a repair person.

Case	Check
The air conditioner does not operate. (OPERATION lamp is off.)	• Has a breaker been turned OFF or a fuse blown? • Is there a power failure? • Are fresh batteries installed in the remote controller? • Is the timer setting correct?
Cooling (Heating) effect is poor.	• Are the air filters clean? • Is anything to blocking the air inlet or the outlet of the indoor and the outdoor units? • Is the temperature setting appropriate? • Are the windows and doors closed? • Are the airflow rate and the air direction set appropriately? • Is the unit set to the INTELLIGENT EYE mode? (page 18.)
Operation stops suddenly. (OPERATION lamp flashes.)	• Are the air filters clean? • Is there anything blocking the air inlet or the outlet of the indoor and the outdoor units? Turn the electrical breaker off, clean the air filters or take all obstacles away from inlet and outlet. Then turn the breaker ON again and try operating the air conditioner with the remote controller. If the lamp still flashes, call your authorized dealer where you bought the air conditioner.
An abnormal functioning happens during operation.	• The air conditioner may malfunction with lightning or radio waves. Turn the circuit breaker OFF, to reset. Then turn it ON again and try operating the air conditioner with the remote controller.

Call your authorized dealer immediately.

⚠ WARNING

- When an abnormality (such as a burning smell) occurs, stop operation and turn the circuit breaker OFF.
  Continued operation in an abnormal condition may result in troubles, electric shocks or fire.
  Consult your authorized dealer where you bought the air conditioner.
- Do not attempt to repair or modify the air conditioner by yourself.
  Work performed by untrained persons could result in electric shocks, personal injury, fire, or additional damage to equipment.
  Consult the service shop where you bought the air conditioner.

If one of the following symptoms takes place, call your authorized dealer immediately.

■ **The power cord is abnormally hot or damaged.** ■ **An abnormal sound is heard during operation.** ■ **The safety breaker, a fuse, or the ground leakage breaker cuts off the operation frequently.** ■ **A switch or a button often fails to work properly.** ■ **There is a burning smell.** ■ **Water leaks from the indoor unit.**	▶ Turn the breaker OFF and call your authorized dealer.

■ After a power failure The air conditioner automatically resumes operation in about 3 minutes. You should just wait for a while.	■ Lightning If lightning may strike the neighboring area, stop operation and turn the breaker OFF for system protection.

Disposal requirements

Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations. Contact your authorized dealer for assitance.

We recommend periodical maintenance.

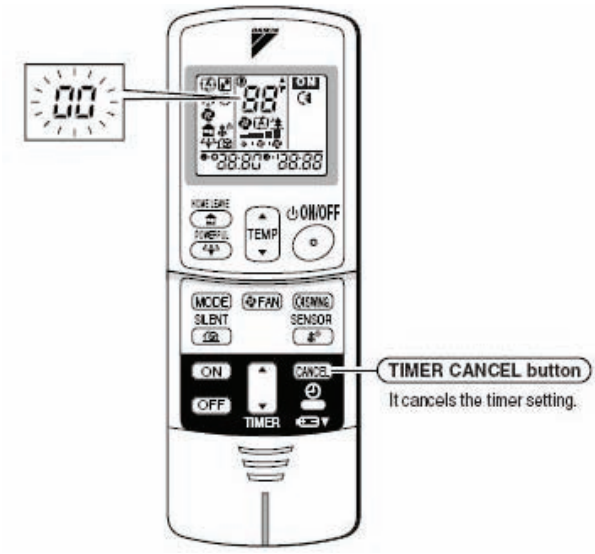
In certain operating conditions, the inside of the air conditioner may get foul after several seasons of use, resulting in poor performance. It is recommended to have periodical maintenance by a specialist aside from regular cleaning by the user. For specialist maintenance, contact your authorized dealer where you bought the air conditioner.
The maintenance cost must be born by the user.

Fault diagnosis.

FAULT DIAGNOSIS BY REMOTE CONTROLLER

In the ARC433A51 series, the temperature display sections on the main unit indicate corresponding codes.

1. When the TIMER CANCEL button is held down for 5 seconds, a "00" indication flashes on the temperature display section.



2. Press the TIMER CANCEL button repeatedly until a continuous beep is produced.

- The code indication changes as shown below, and notifies with a long beep.

	CODE	MEANING
SYSTEM	00	NORMAL
	U0	REFRIGERANT SHORTAGE
	U2	DROP VOLTAGE OR MAIN CIRCUIT OVERVOLTAGE
	U4	FAILURE OF TRANSMISSION (BETWEEN INDOOR UNIT AND OUTDOOR UNIT)
INDOOR UNIT	A1	INDOOR PCB DEFECTIVENESS
	A5	HIGH PRESSURE CONTROL OR FREEZE-UP PROTECTOR
	A6	FAN MOTOR FAULT
	C4	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	C9	FAULTY SUCTION AIR TEMPERATURE SENSOR
OUTDOOR UNIT	EA	COOLING-HEATING SWITCHING ERROR
	E5	OL STARTED
	E6	FAULTY COMPRESSOR START UP
	E7	DC FAN MOTOR FAULT
	E8	OPERATION HALT DUE TO DETECTION OF INPUT OVER CURRENT
	F3	HIGH TEMPERATURE DISCHARGE PIPE CONTROL
	F6	HIGH PRESSURE CONTROL (IN COOLING)
	H6	OPERATION HALT DUE TO FAULTY POSITION DETECTION SENSOR
	H8	CT ABNORMALITY
	H9	FAULTY SUCTION AIR TEMPERATURE SENSOR
	J3	FAULTY DISCHARGE PIPE TEMPERATURE SENSOR
	J6	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	L4	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
	L5	OUTPUT OVERCURRENT
	P4	FAULTY INVERTER CIRCUIT HEATSINK TEMPERATURE SENSOR

NOTE

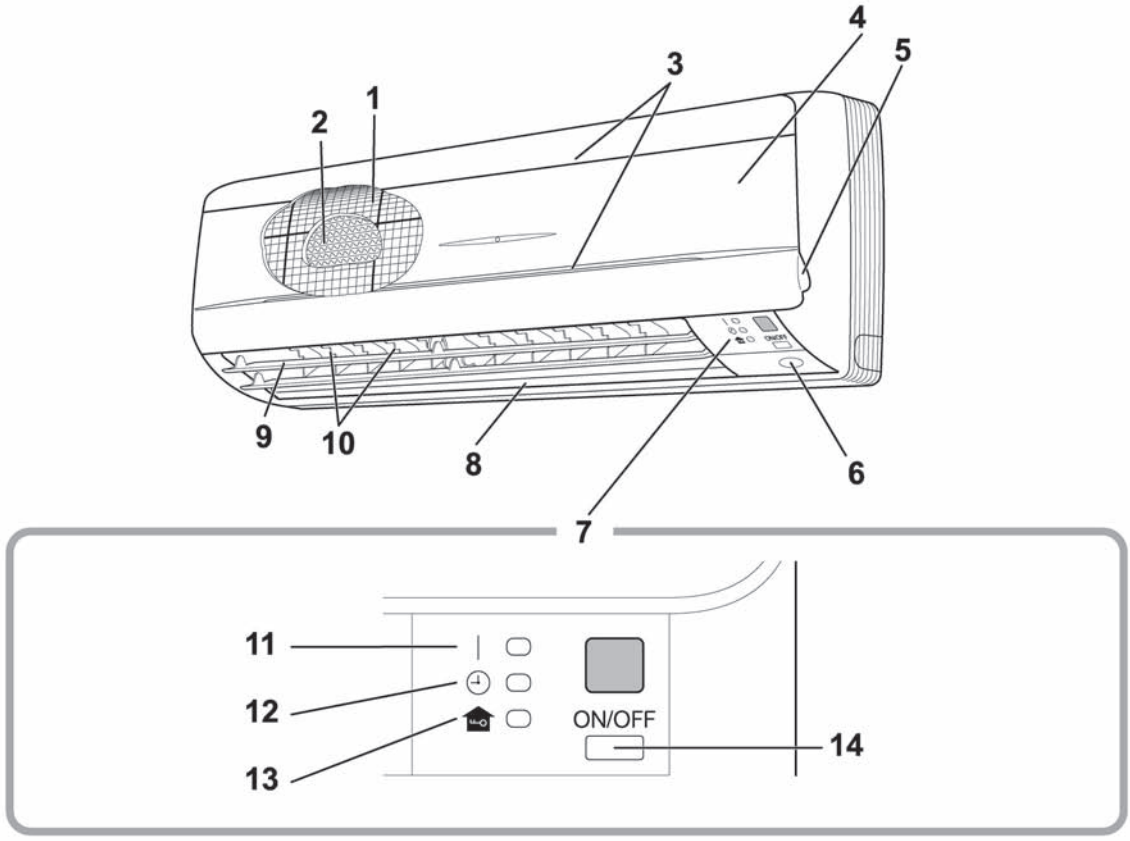
1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the TIMER CANCEL button down for 5 seconds. The code display also cancel itself if the button is not pressed for 1 minute.

3P141693-1K

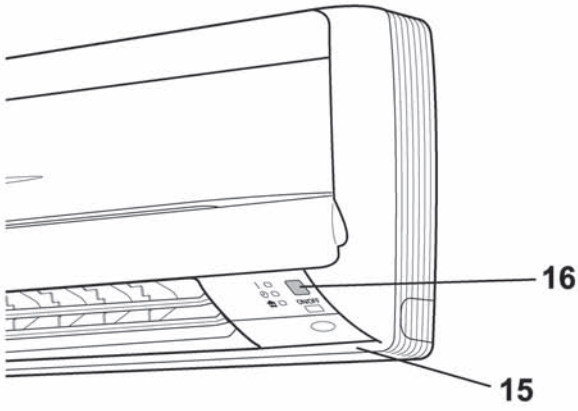
12.3 15/18/24 Class

Names of parts

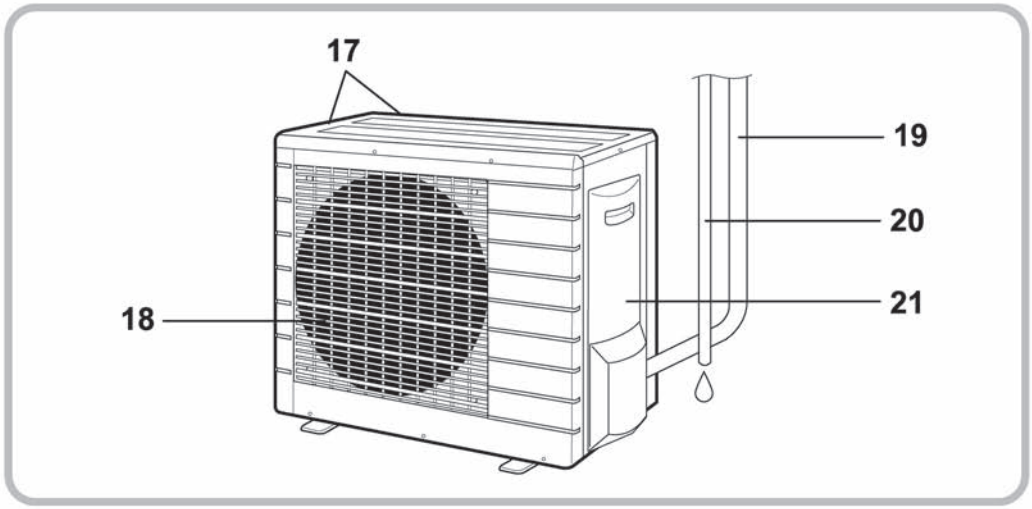
■ Indoor Unit



■ Main unit control panel



■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Air-purifying filter with photocatalytic deodorizing function:**
   - These filters are attached to the inside of the air filters.
3. **Air inlet**
4. **Front panel**
5. **Panel tab**
6. **INTELLIGENT EYE sensor:**
   - It detects the movements of people and automatically switches between normal operation and energy saving operation. (page 18.)
7. **Display**
8. **Air outlet**
9. **Flaps (horizontal blades):** (page 12.)
10. **Louvers (vertical blades):**
    - The louvers are inside of the air outlet. (page 13.)
11. **Operation lamp (green)**
12. **TIMER lamp (yellow):** (page 20.)
13. **HOME LEAVE lamp (red):**
    - Lights up when you use HOME LEAVE Operation. (page 16.)
14. **Indoor Unit ON/OFF switch:**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refers to the following table.

Mode	Temperature setting	Airflow rate
AUTO	77°F	AUTO

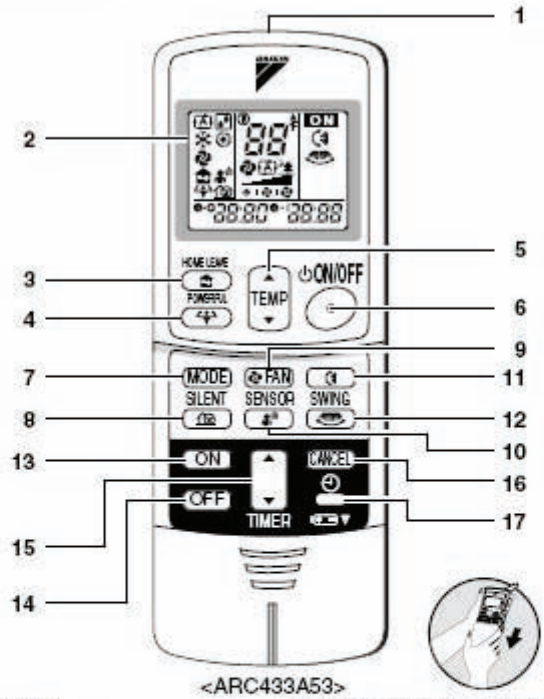
    - This switch is useful when the remote controller is missing.
15. **Room temperature sensor:**
    - It senses the air temperature around the unit.
16. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

17. **Air inlet:** (Back and side)
18. **Air outlet**
19. **Refrigerant piping and inter-unit cable**
20. **Drain hose**
21. **Earth grounding terminal:**
    - It is inside of this cover.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



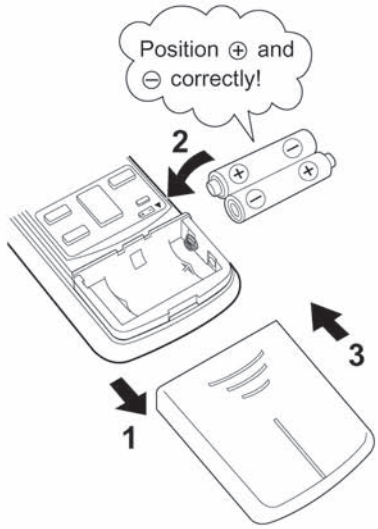
<ARC433A53>

1. Signal transmitter:
   • It sends signals to the indoor unit.
2. Display:
   • It displays the current settings.
   (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. HOME LEAVE button:
   HOME LEAVE operation (page 16.)
4. POWERFUL button: (Maximum operation)
   POWERFUL operation (page 14.)
5. TEMPERATURE adjustment buttons:
   • It changes the temperature setting.
6. ON/OFF button:
   • Press this button once to start operation. Press once again to stop it.
7. MODE selector button:
   • It selects the operation mode.
   (AUTO/DRY/COOL/HEAT/FAN) (page 10.)
8. SILENT button: OUTDOOR UNIT SILENT operation (page 15.)
9. FAN setting button:
   • It selects the airflow rate setting.
10. SENSOR button: INTELLIGENT EYE operation (page 18.)
11. SWING button: (page 12.)
    • Flap (Horizontal blade)
12. SWING button: (page 12.)
    • Louver (Vertical blades)
13. ON TIMER button: (page 21.)
14. OFF TIMER button: (page 20.)
15. TIMER Setting button:
    • It changes the time setting.
16. TIMER CANCEL button:
    • It cancels the timer setting.
17. CLOCK button: (page 9.)

Preparation Before Operation

■ To set the batteries

1. **Slide the front cover to take it off.**
2. **Set two dry batteries (AAA).**
3. **Set the front cover as before.**



ATTENTION

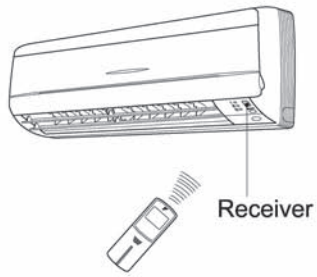
■ About batteries

- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out. In case the remote controller is not used for a long time remove all batteries in order to prevent liquid leak of the battery.
- We recommend replacing once a year, although if the remote controller display begins to fade or if reception deteriorates, please replace with new alkali batteries. Using manganese batteries reduces the lifespan.
- The attached batteries are provided for the initial use of the system.
  The usable period of the batteries may be short depending on the manufactured date of the air conditioner.
- Pressing two or more buttons simultaneously may cause the strange display of the remote controller.
  The remote controller is not malfunction. In this case take the batteries out and reset them.

Preparation Before Operation

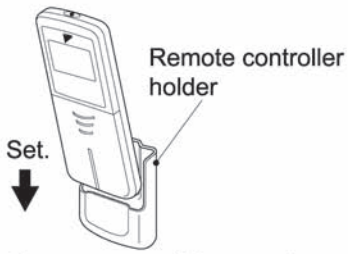
■ To operate the remote controller

- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- Do not drop the remote controller. Do not get it wet.
- The maximum distance for communication is about 23 Ft.



■ To fix the remote controller holder on the wall

1. **Choose a place from where the signals reach the unit.**
2. **Fix the holder to a wall, a pillar, etc. with the screws supplied with the holder.**
3. **Place the remote controller in the remote controller holder.**



● To remove, pull it upwards.

ATTENTION

■ About remote controller

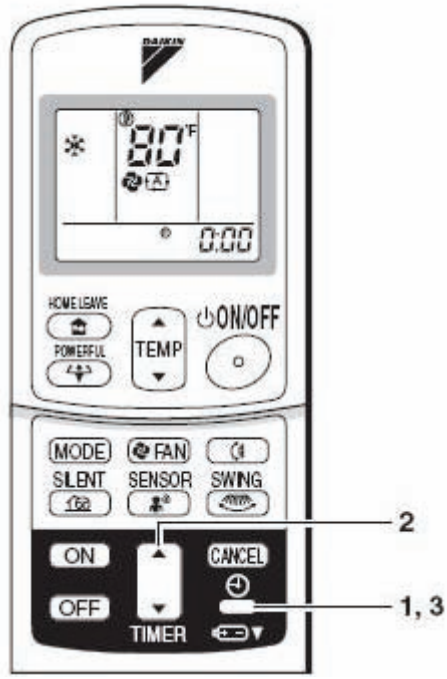
- Do not put the remote controller in the following places.
  - In direct sunlight.
  - In vicinity of a heater.
- Dust on the signal transmitter or receiver will reduce the sensitivity. Wipe off dust with soft cloth.
- Signal communication may be disabled if an electronic-starter-type fluorescent lamp (such as inverter-type lamps) is in the room. Consult your authorized dealer if that is the case.
- If the remote controller signals happen to operate another appliance, move that appliance to somewhere else, or consult your authorized dealer.

■ To set the clock

1. **Press "CLOCK button".**
   0:00 is displayed.
   ⏲ blinks.
2. **Press "TIMER setting button" to set the clock to the present time.**
   Holding down "▲" or "▼" button rapidly increases or decreases the time display.
3. **Press "CLOCK button".**
   : blinks.

■ Turn the breaker ON

- Turning ON the breaker opens the flap, then closes it again. (This is a normal procedure.)



NOTE

■ Tips for saving energy

- Be careful not to cool (heat) the room too much.
  Keeping the temperature setting at a moderate level helps save energy.
- Cover windows with a blind or a curtain.
  Blocking sunlight and air from outdoors increases the cooling (heating) effect.
- Clogged air filters cause inefficient operation and waste energy. Clean them once every two weeks.

Recommended temperature setting
For cooling: 78°F – 82°F For heating: 68°F – 75°F

■ Please note

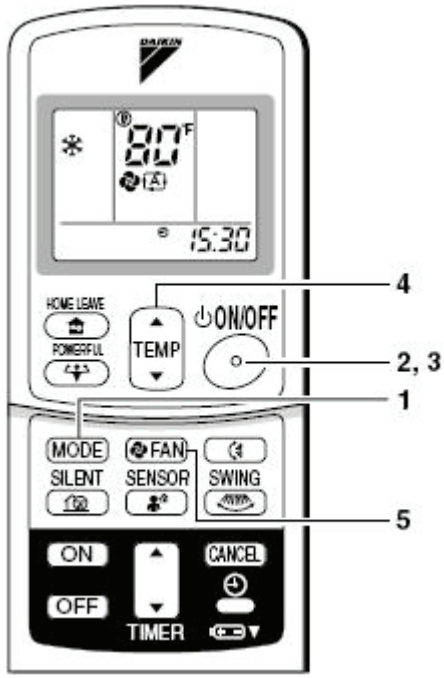
- When the main power switch is turned on, some watts of electrictly are being used even when the system is not operating.
- If you are not going to use the air conditioner for a long period, for example in spring or autumn, turn the breaker OFF to save energy.
- Use the air conditioner in the following conditions.

Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature: 14 to 115 °F Indoor temperature: 64 to 90 °F Indoor humidity: 80% max.	• A safety device may work to stop the operation under 0 °F and over 115 °F outdoor temperature. • See Note 2 for 0 °F to 14 °F operation. • Condensation may occur on the indoor unit and drip.
HEAT	Outdoor temperature: 5 to 64 °F Indoor temperature: 50 to 86 °F	• A safety device may work to stop the operation under 0 °F or over 64 °F outdoor temperature. See the Note 3 for 0 °F to 5 °F.
DRY	Outdoor temperature: 14 to 115 °F Indoor temperature: 64 to 90 °F Indoor humidity: 80% max.	• A safety device may work to stop the operation. • Condensation may occur on the indoor unit and drip.

Operation outside humidity or temperature range may cause a safety device to disable the system.
RX15/18/24FVJU
Note: A breaker must be turned on for 24 hours before the operation start if the ambient temperature is below 14ºF, or the unit will not start smoothly.

AUTO · DRY · COOL · HEAT · FAN Operation

The air conditioner operates with the operation mode of your choice.
From the next time on, the air conditioner will operate with the same operation mode.



■ To start operation

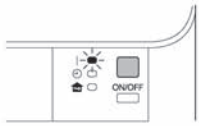
1. Press "MODE selector button" and select a operation mode.

- Each pressing of the button advances the mode setting in sequence.

  Ⓐ: AUTO
  : DRY
  : COOL
  : HEAT
  : FAN

2. Press "ON/OFF button" .

- The OPERATION lamp lights up.



■ To stop operation

3. Press "ON/OFF button" again.

- Then OPERATION lamp goes off.

■ To change the temperature setting

4. Press "TEMPERATURE adjustment button".

DRY or FAN mode	AUTO or COOL or HEAT mode
The temperature setting is not variable.	Press "▲" to raise the temperature and press " ▼ " to lower the temperature.
	Set to the temperature you like.

■ To change the airflow rate setting

5. Press "FAN setting button".

DRY mode	AUTO or COOL or HEAT or FAN mode
The airflow rate setting is not variable.	Five levels of airflow rate setting from " " to " " plus " " " " are available.

- Indoor unit quiet operation

  When the airflow is set to " ", the noise from the indoor unit will become quieter.
  Use this when making the indoor unit quieter.
  The unit might lose capacity when the airflow rate is set to a low level.

NOTE

■ Note on HEAT operation

- Since this air conditioner heats the room by taking heat from outdoor air to indoors, the heating capacity becomes smaller in lower outdoor temperatures. If the heating effect is insufficient, it is recommended to use another heating appliance in combination with the air conditioner.
- The heat pump system heats the room by circulating hot air around all parts of the room. After the start of heating operation, it takes some time before the room gets warmer.
- In heating operation, frost may occur on the outdoor unit and lower the heating capacity. In that case, the system switches into defrosting operation to take away the frost.
- During defrosting operation, hot air does not flow out of indoor unit.

■ Note on COOL operation

- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, performance drops.

■ Note on DRY operation

- The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and fan strength, so manual adjustment of these functions is unavailable.

■ Note on AUTO operation

- In AUTO operation, the system selects an appropriate operation mode (COOL or HEAT) based on the room temperature at the start of the operation.
- The system automatically reselects setting at a regular interval to bring the room temperature to user-setting level.
- If you do not like AUTO operation, you can manually select the operation mode and setting you like.

■ Note on airflow rate setting

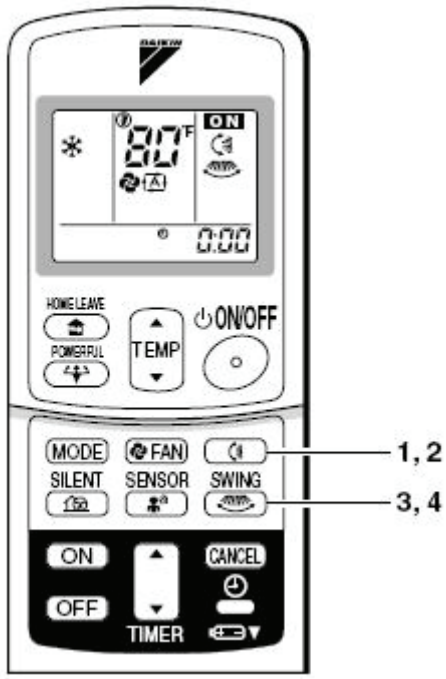
- At smaller airflow rates, the cooling (heating) effect is also less.

Adjusting the Airflow Direction

You can adjust the airflow direction to increase your comfort.

■ To adjust the horizontal blade (flap)

1. **Press "SWING button ".**
   - " " is displayed on the LCD.
2. **When the flap has reached the desired position, press "SWING button " once more.**
   - The flap will stop moving.



■ To adjust the vertical blades (louvers)

3. **Press "SWING button ".**
   - " " is displayed on the LCD.
4. **When the louvers have reached the desired position, press the "SWING button " once more.**
   - The louvers will stop moving.

■ To 3-D Airflow

Press the "SWING button" and the "SWING button":

the " " and " " display will light up and the flap and louvers will move in turn. (page 12.)

■ To cancel 3-D Airflow

Press either the "SWING button" or the "SWING button". (page 12.)

Notes on louvers angles

■ ATTENTION

- Always use a remote controller to adjust the louvers angles. In side the air outlet, a fan is rotating at a high speed and may cause bodily injury if fan comes in contact with fingers.

Notes on flaps angles

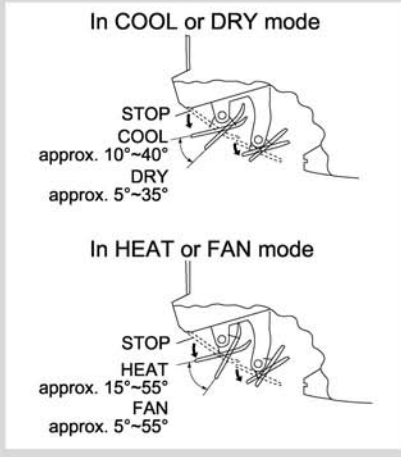
- When **"SWING button"** is selected, the flaps swinging range depends on the operation mode. (See the figure.)

Three-Dimensional (3-D) Airflow

- Using three-dimensional airflow circulates cold air, which tends to collected at the bottom of the room, and hot air, which tends to collect near the ceiling, throughout the room, preventing areas of cold and hot developing.

■ ATTENTION

- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, fan is rotating at a high speed and may cause bodily injury if fan comes in contact with fingers.



13

POWERFUL Operation

POWERFUL operation quickly maximizes the cooling (heating) effect in any operation mode. You can get the maximum capacity.

■ To start POWERFUL operation

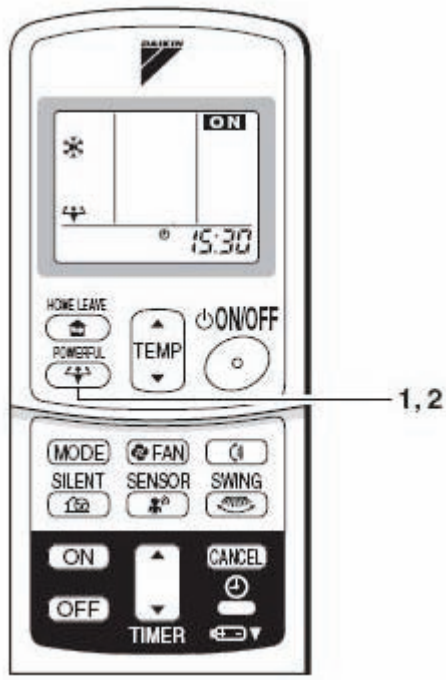
1. Press "POWERFUL button".

- POWERFUL operation ends in 20 minutes.
  Then the system automatically operates again with the settings which were used before POWERFUL operation.
- When using POWERFUL operation, there are some functions which are not available.
- "" is displayed on the LCD.

■ To cancel POWERFUL operation

2. Press "POWERFUL button" again.

- "" disappears from the LCD.



NOTE

■ Notes on POWERFUL operation

- POWERFUL Operation cannot be used together with QUIET Operation. Priority is given to the function of whichever button is pressed last.
- POWERFUL Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the "" disappears from the LCD.
- **In COOL and HEAT mode**
  To maximize the cooling (heating) effect, the capacity of outdoor unit must be increased and the airflow rate be fixed to the maximum setting.
  The temperature and airflow settings are not variable.
- **In DRY mode**
  The temperature setting is lowered by 4.5°F and the airflow rate is slightly increased.
- **In FAN mode**
  The airflow rate is fixed to the maximum setting.

OUTDOOR UNIT QUIET Operation

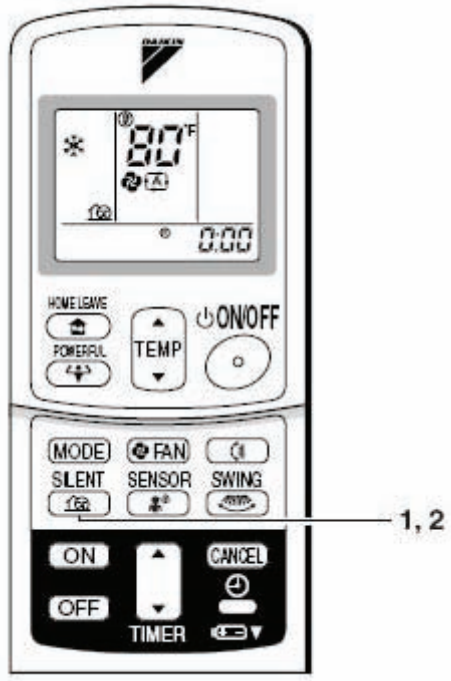
OUTDOOR UNIT QUIET operation lowers the noise level of the outdoor unit by changing the fan speed on the outdoor unit. This function is convenient during night.

■ To start OUTDOOR UNIT QUIET operation

1. Press **SILENT** button.
   - "" is displayed on the LCD.

■ To cancel OUTDOOR UNIT QUIET operation

2. Press **SILENT** button again.
   - "" disappears from the LCD.



NOTE

■ Note on OUTDOOR UNIT QUIET operation

- This function is available in COOL, HEAT, and AUTO modes. (This is not available in FAN and DRY modes.)
- POWERFUL operation and OUTDOOR UNIT QUIET operation cannot be used at the same time. Priority is given to the function of whichever button is pressed last.
- If operation is stopped using the remote controller or the main unit ON/OFF switch when using OUTDOOR UNIT QUIET operation, "" will remain on the remote controller display.

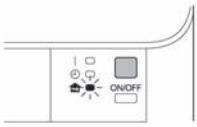
HOME LEAVE Operation

HOME LEAVE operation is a function which allows you to record your preferred temperature and airflow rate settings.

■ To start HOME LEAVE operation

1. Press "HOME LEAVE button" .

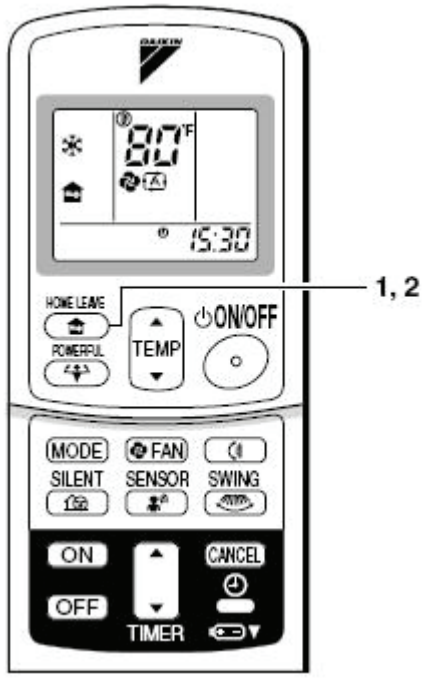
- " " is displayed on the LCD.
- The HOME LEAVE lamp lights up.



■ To cancel HOME LEAVE operation

2. Press "HOME LEAVE button" again.

- " " disappears from the LCD.
- The HOME LEAVE lamp goes off.



Before using HOME LEAVE operation.

■ To set the temperature and airflow rate for HOME LEAVE operation

When using HOME LEAVE operation for the first time, please set the temperature and airflow rate for HOME LEAVE operation. Record your preferred temperature and airflow rate.

	Initial setting		Selectable range	
	Temperature	Airflow rate	Temperature	Airflow rate
Cooling	77°F	AUTO	64-90°F	5 step, "A" and " "
Heating	77°F	AUTO	50-86°F	5 step, "A" and " "

1. **Press "HOME LEAVE button". Make sure " " is displayed in the remote controller display.**
2. **Adjust the set temperature with " ▲ " or " ▼ " as you like.**
3. **Adjust the airflow rate with "FAN" setting button as you like.**

Home leave operation will run with these settings the next time you use the unit. To change the recorded information, repeat steps 1 – 3.

■ What's the HOME LEAVE operation?

Is there a set temperature and airflow rate which is most comfortable, a set temperature and airflow rate which you use the most? HOME LEAVE operation is a function that allows you to record your favorite set temperature and airflow rate. You can start your favorite operation mode simply by pressing the HOME LEAVE button on the remote controller. This function is convenient in the following situations.

■ Useful in these cases

1. Use as an energy-saving mode.

Set the temperature 3-5°F higher (cooling) or lower (heating) than normal. Setting the fan speed to the lowest setting allows the unit to be used in energy-saving mode. Also convenient for use while you are out or sleeping.

• Every day before you leave the house...

When you go out, push the "HOME LEAVE Operation" button, and the air conditioner will adjust capacity to reach the preset temperature for HOME LEAVE Operation.

When you return, you will be welcomed by a comfortably air conditioned room.

Push the "HOME LEAVE Operation" button again, and the air conditioner will adjust capacity to the set temperature for normal operation.

• Before bed...

Set the unit to HOME LEAVE Operation before leaving the living room when going to bed.

The unit will maintain the temperature in the room at a comfortable level while you sleep.

When you enter the living room in the morning, the temperature will be just right. Disengaging HOME LEAVE Operation will return the temperature to that set for normal operation. Even the coldest winters will pose no problem!

2. Use as a favorite mode.

Once you record the temperature and airflow rate settings you most often use, you can retrieve them by pressing HOME LEAVE button. You do not have to go through troublesome remote controller operations.

NOTE

- Once the temperature and airflow rate for HOME LEAVE operation are set, those settings will be used whenever HOME LEAVE operation is used in the future. To change these settings, please refer to the "Before using HOME LEAVE operation" section above.
- HOME LEAVE operation is only available in COOL and HEAT mode. It cannot be used in AUTO, DRY, and FAN mode.
- HOME LEAVE operation runs in accordance with the previous operation mode (COOL or HEAT) before using HOME LEAVE operation.
- HOME LEAVE operation and POWERFUL operation cannot be used at the same time. Last button that was pressed has priority.
- The operation mode cannot be changed while HOME LEAVE operation is being used.
- When operation is shut off during HOME LEAVE operation, using the remote controller or the indoor unit ON/OFF switch, "🏠" will remain on the remote controller display.

INTELLIGENT EYE Operation

"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

■ To start INTELLIGENT EYE operation

1. Press "SENSOR button".

- " " is displayed on the LCD.

■ To cancel the INTELLIGENT EYE operation

2. Press "SENSOR button" again.

- " " disappears from the LCD.

[EX.]

When somebody is in the room

- **Normal operation.**

⇩

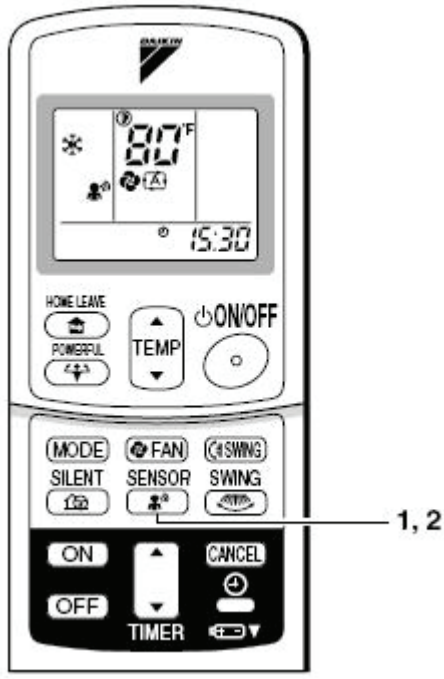
When nobody is in the room

- **20 min. after, start energy saving operation.**

⇩

When somebody is back in the room

- **Back to normal operation.**



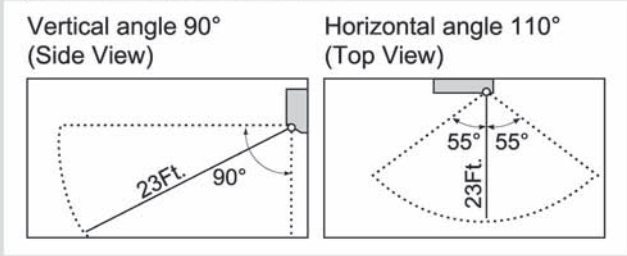
"INTELLIGENT EYE" is useful for Energy Saving

■ Energy saving operation

- Change the temperature –3.6°F in heating / +3.6°F in cooling / +1.8°F in dry mode from set temperature.
- Decrease the airflow rate slightly in fan operation. (In FAN mode only)

Notes on "INTELLIGENT EYE"

- Application range is as follows.



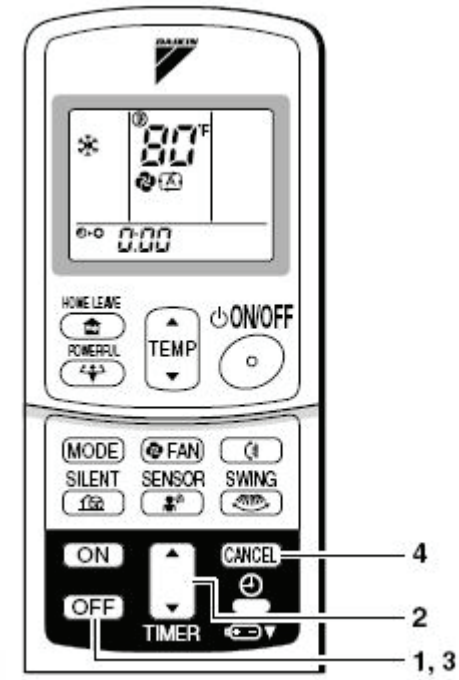
- Sensor may not detect moving objects further than 23Ft. away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode (page 20.) will not go on during your use of INTELLIGENT EYE operation.

⚠CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor's detection area. This sensor can detect objects it shouldn't as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

TIMER Operation

Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning.
You can also use OFF TIMER and ON TIMER in combination.



■ To use OFF TIMER operation

- Check that the clock is correct.
  If not, set the clock to the present time. (page 9.)

1. Press "OFF TIMER button".

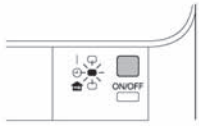
0:00 is displayed.
⊙-○ blinks.

2. Press "TIMER Setting button" until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press "OFF TIMER button" again.

- The TIMER lamp lights up.



■ To cancel the OFF TIMER operation

4. Press "CANCEL button".

- The TIMER lamp goes off.

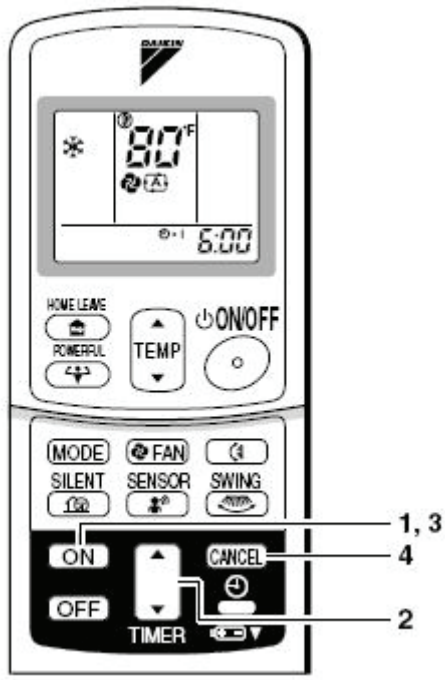
NOTE

- When TIMER is set, the present time is not displayed.
- Once you set ON, OFF TIMER, the time setting is kept in the memory. (The memory is lost when remote controller batteries are replaced.)
- When operating the unit via the ON/OFF Timer, the actual length of operation may vary from the time entered by the user.

■ NIGHT SET MODE

When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (1°F up in COOL, 3.6°F down in HEAT) to prevent excessive cooling (heating) for your pleasant sleep.

■ To use ON TIMER operation



- Check that the clock is correct. If not, set the clock to the present time. (page 9.)

1. Press "ON TIMER button".

6:00 is displayed.

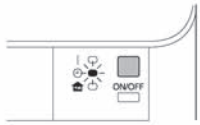
⊙▸| blinks.

2. Press "TIMER Setting button" until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press "ON TIMER button" again.

- The TIMER lamp lights up.



■ To cancel ON TIMER operation

4. Press "CANCEL button".

- The TIMER lamp goes off.

■ To combine ON TIMER and OFF TIMER

- A sample setting for combining the two timers is shown below.

(Example)
Present time: 11:00 p.m.
(The unit operating)
OFF TIMER at 0:00 a.m.
ON TIMER at 7:00 a.m.
Combined

ATTENTION

■ In the following cases, set the timer again.

- After a breaker has turned OFF.
- After a power failure.
- After replacing batteries in the remote controller.

Care and Cleaning

⚠ CAUTION **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

Units

To avoid possible bodily injury, units should be shutoff or disconnected before any cleaning or servicing is attempted.

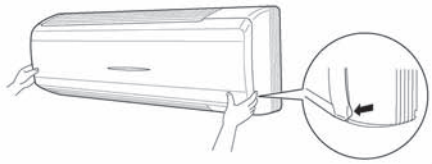
■ Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

■ Front panel

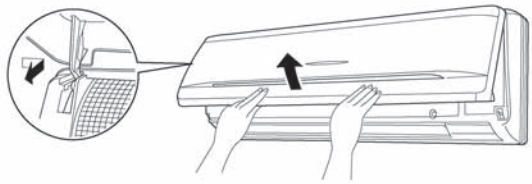
1. Open the front panel.

- Hold the panel by the tabs on the two sides and lift it until it stops with a click.



2. Remove the front panel.

- Open the front panel further while sliding it to either the left or right and pulling it toward you. This will disconnect the rotation dowel on one side. Then disconnect the rotation dowel on the other side in the same manner.

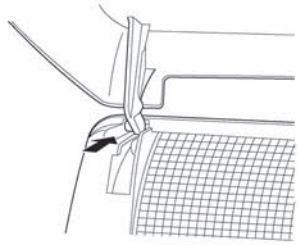


3. Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front panel.

- Align the rotation dowels on the left and right of the front panel with the slots, then push them all the way in.
- Close the front panel slowly. (Press the panel at both sides and the center.)

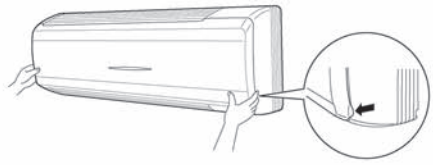


⚠ CAUTION

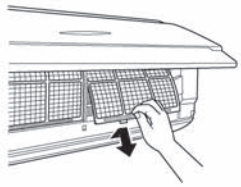
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 104 °F, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

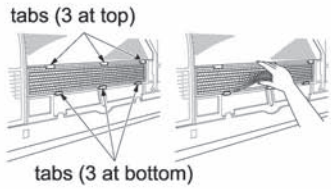
Filters

1. **Open the front panel. (page 22.)**
2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.

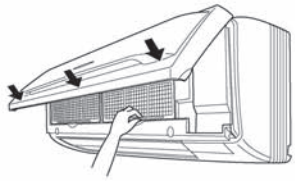


3. **Take off the air-purifying filter with photocatalytic deodorizing function.**
   - Press the top of the air-cleaning filter onto the tabs (3 at top). Then press the bottom of the filter up slightly, and press it onto the tabs (3 at bottom).





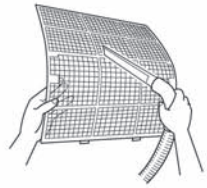
4. **Clean or replace each filter.**
   See figure.



5. **Set the air filter and the air-purifying filter with photocatalytic deodorizing function as they were and close the front panel.**
   - Press the front panel at both sides and the center.

■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Air-purifying filter with photocatalytic deodorizing function (gray)

The Air-purifying filter with photocatalytic deodorizing function can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **After washing, shake off remaining water and dry in the shade.**
4. **Since the material is made out of paper, do not wring out the filter when removing water from it.**

[Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
   - Dispose of the old filter as flammable waste.

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded. Check the units to ensure they are level and secure.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the water drains smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult your authorized dealer.

■ Before a long idle period

1. **Operate the "FAN only" for several hours on a warm day to dry out the inside.**
   - Press "MODE selector button" and select "FAN" operation.
   - Press "ON/OFF button" and start operation.
2. **After operation stops, turn off the electrical circuit breaker for the room air conditioner.**
3. **Remove and clean the air filters. Reinstall filters after cleaning.**
4. **Take out batteries from the remote controller.**

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odor.
- To order air-purifying filter with photocatalytic deodorizing function, contact your authorized dealer where you bought the air conditioner.
- Dispose of old filters as required by local codes.

Item	Part No.
Air-purifying filter with photocatalytic deodorizing function. (without frame) 1 set	KAF952A42

Trouble Shooting

Conditions that appear to be abnormal but are not operational problems.

The following cases are not abnormal problems and you may just continue using it.

Case	Explanation
Operation does not start quickly. • When ON/OFF button was pressed soon after operation was stopped. • When the mode was reselected.	• This is to protect the air conditioner. You should wait for about 3 minutes.
Hot air does not flow out soon after the start of heating operation.	• The air conditioner is warming up. You should wait for 1 to 4 minutes. (The system is designed to start discharging air only after it has reached a certain temperature.)
The heating operation stops suddenly and a flowing sound is heard.	• The system is taking away the frost on the outdoor unit. You should wait for about 3 to 8 minutes.
The outdoor unit emits water or steam.	■ In HEAT mode • The frost on the outdoor unit melts into water or steam when the air conditioner is in defrost operation. ■ In COOL or DRY mode • Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.
Mist comes out of the indoor unit.	■ This happens when the air in the room is cooled into mist by the cold airflow during cooling operation.
The indoor unit gives out odor.	■ This happens when smells of the room, furniture, or cigarettes are absorbed into the unit and discharged with the airflow. (If this happens, we recommend you to have the indoor unit washed by a technician. Consult your authorized dealer where you bought the air conditioner.)
The outdoor fan rotates while the air conditioner is not in operation.	■ After operation is stopped: • The outdoor fan continues rotating for another 60 seconds for system protection. ■ While the air conditioner is not in operation: • When the outdoor temperature is very high, the outdoor fan starts rotating for system protection.
The operation stopped suddenly. (OPERATION lamp is on.)	■ For system protection, the air conditioner may stop operating on a sudden large voltage fluctuation. It automatically resumes operation in about 3 minutes.

Check again.

Please check again before calling a repair person.

Case	Check
The air conditioner does not operate. (OPERATION lamp is off.)	• Has a breaker been turned OFF or a fuse blown? • Is there a power failure? • Are fresh batteries installed in the remote controller? • Is the timer setting correct?
Cooling (Heating) effect is poor.	• Are the air filters clean? • Is anything blocking the air inlet or the outlet of the indoor and the outdoor units? • Is the temperature setting appropriate? • Are the windows and doors closed? • Are the airflow rate and the air direction set appropriately?
Operation stops suddenly. (OPERATION lamp flashes.)	• Are the air filters clean? • Is there anything blocking the air inlet or the outlet of the indoor and the outdoor units? Turn the electrical breaker off, clean the air filters or remove obstacles away from inlet and outlet. Then turn the breaker ON again and try operating the air conditioner with the remote controller. If the lamp still blinks, call your authorized dealer where you bought the air conditioner.
An abnormal functioning happens during operation.	• The air conditioner may malfunction with lightning or radio waves. Turn the circuit breaker OFF, to reset unit. Then turn it ON again and try operating the air conditioner with the remote controller.

Call your authorized dealer immediately.

⚠ WARNING

- When an abnormality (such as a burning smell) occurs, stop operation and turn the circuit breaker OFF.
  Continued operation in an abnormal condition may result in troubles, electric shocks or fire.
  Consult your authorized dealer where you bought the air conditioner.
- Do not attempt to repair or modify the air conditioner by yourself.
  Work performed by untrained persons could result in electric shocks, personal injury, fire, or additional damage to equipment.
  Consult your authorized dealer where you bought the air conditioner.

If one of the following symptoms takes place, call your authorized dealer immediately.

- **The power cord is abnormally hot or damaged.**
- **An abnormal sound is heard during operation.**
- **The safety breaker, a fuse, or the ground leakage breaker cuts off the operation frequently.**
- **A switch or a button often fails to work properly.**
- **There is a burning smell.**
- **Water leaks from the indoor unit.**

▶ Turn the breaker OFF and call your authorized dealer.

■ After a power failure	■ Lightning
The air conditioner automatically resumes operation in about 3 minutes. You should just wait for a while.	If lightning may strike the neighboring area, stop operation and turn the breaker OFF for system protection.

Disposal requirements

Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations. Contact your authorized dealer for assitance.

We recommend periodical maintenance.

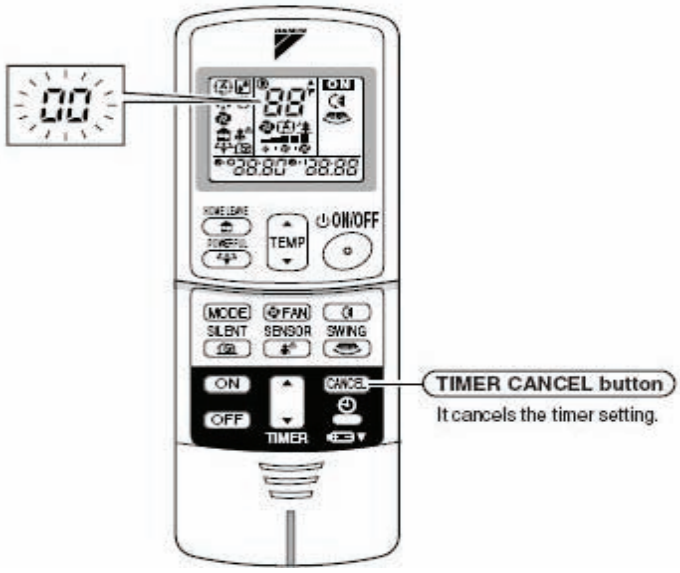
In certain operating conditions, the inside of the air conditioner may get foul after several seasons of use, resulting in poor performance. It is recommended to have periodical maintenance by a specialist aside from regular cleaning by the user. For specialist maintenance, contact your authorized dealer where you bought the air conditioner.
The maintenance cost must be born by the user.

Fault diagnosis.

FAULT DIAGNOSIS BY REMOTE CONTROLLER

In the ARC433A53 series, the temperature display sections on the main unit indicate corresponding codes.

1. When the TIMER CANCEL button is held down for 5 seconds, a "00" indication flashes on the temperature display section.



2. Press the TIMER CANCEL button repeatedly until a continuous beep is produced.

- The code indication changes as shown below, and notifies with a long beep.

	CODE	MEANING
SYSTEM	00	NORMAL
	U0	REFRIGERANT SHORTAGE
	U2	DROP VOLTAGE OR MAIN CIRCUIT OVERVOLTAGE
	U4	FAILURE OF TRANSMISSION (BETWEEN INDOOR UNIT AND OUTDOOR UNIT)
INDOOR UNIT	A1	INDOOR PCB DEFECTIVENESS
	A5	HIGH PRESSURE CONTROL OR FREEZE-UP PROTECTOR
	A6	FAN MOTOR FAULT
	C4	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	C9	FAULTY SUCTION AIR TEMPERATURE SENSOR
OUTDOOR UNIT	EA	COOLING-HEATING SWITCHING ERROR
	E5	OL STARTED
	E6	FAULTY COMPRESSOR START UP
	E7	DC FAN MOTOR FAULT
	E8	OPERATION HALT DUE TO DETECTION OF INPUT OVER CURRENT
	F3	HIGH TEMPERATURE DISCHARGE PIPE CONTROL
	H6	OPERATION HALT DUE TO FAULTY POSITION DETECTION SENSOR
	H8	CT ABNORMALITY
	H9	FAULTY SUCTION AIR TEMPERATURE SENSOR
	J3	FAULTY DISCHARGE PIPE TEMPERATURE SENSOR
	J6	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	L4	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
	L5	OUTPUT OVERCURRENT
	P4	FAULTY INVERTER CIRCUIT HEATSINK TEMPERATURE SENSOR

NOTE

1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the TIMER CANCEL button down for 5 seconds. The code display also cancel itself if the button is not pressed for 1 minute.

3P141693-2K

13. Optional Accessories

13.1 Option List

13.1.1 Indoor Units

	Option Name	FTXS09/12DVJU	FTXS15/18/24DVJU
1	Centralized Control Board-Up to 5 Rooms ★1	KRC72	
2	Wiring Adapter for Time Clock / Remote Control ★2 (Normal Open Pulse Contact / Normal Open Contact)	KRP413A1S	
3	Central Remote Controller ★1	DCS302C71	
4	Unified ON/OFF Controller ★1	DCS301C71	
5	Schedule Timer Controller ★1	DST301BA61	
6	Interface Adapter for Room Air Conditioner	KRP928B2S	
7	Air Purifying Filter with Photocatalytic Deodorizing Function (with Frame)	KAF918A43	—
8	Air Purifying Filter with Photocatalytic Deodorizing Function (without Frame)	KAF918A44	KAF952A42
9	The Remote Controller Loss Prevention with the Chain	KKF917A4	

Note: ★1 Wiring adapter is also required for each indoor unit.
★2 Time clock and other devices ; obtained locally.

13.1.2 Outdoor Units

	Option Name	RX09/12FVJU	RX15/18/24FVJU
1	Drain Plug	KKP937A4	
2	Air Direction Adjustment Grille	KPW937A4	KPW945A4

13.2 Installation Manual

13.2.1 KRP413A1S

Safety Precautions

- Read these safety precautions carefully before installing the unit, and be sure to install the unit properly.
- This manual classifies precautions to the user into the following two categories. These warnings and cautions are for your safety. Follow them.

⚠ WARNING	Faulty installation can result in death or serious injury
⚠ CAUTION	Faulty installation can result in serious injury or other serious consequences.

- Below is a key to symbols used in this manual.

ⓘ	Be sure to follow instructions.
⏚	Be sure to perform grounding work.
⊘	Never attempt.

- After installation is complete, test the unit to confirm that it is working properly, and instruct the owner its proper use.

⚠ WARNING

- Installation should be left to the dealer from whom you purchased the unit, or another qualified professionals.
- Install the unit securely according to the installation manual. Faulty installation may lead to electric shock or fire.
- Be sure to use the supplied or specified parts. Using other parts may lead to electric shock or fire.
- Install the unit securely in a location that will support its weight. If installed in a poor location or improperly installed, the unit may not work as intended.
- For electrical work, follow local electric standards and the installation manual. Faulty installation may lead to fire or electric shock.
- Do not bundle the power cord, or attempt to extend it by splicing it with another cord or by using an extension cord. Do not place any other load on the power circuit used for the unit. Improper wiring may lead to electric shock, heat generation or fire.
- Use dedicated wiring for all electrical connections, and be sure to arrange the wiring so that force applied to the wiring will not damage the terminals. Poor wiring or installation may cause electric shock, heat generation or fire.

⚠ CAUTION

- Before installation, unplug the air conditioner to ensure safety. Failure to do so may cause electric shock.
- Static electricity may damage electric components. Before connecting cables and communication lines, and operating the switches, be sure to discharge any electrical charge from your body (by, for example, touching the earth line)
- Do not install the unit in a location where it may be exposed to flammable gases. If gas leaks and build up around the unit, it may catch fire.
- Do not place the wiring close to the power cord, inter-unit cable, or pipes which generate noise. Treat the wiring with care.

1. Functions and Features

- On/Off setting
- Switching between Instantaneous Contact/Normal Contact
- Connection with five-room central controller (KRC72 for oversea model)
- Connection with fan coil remote controller
- Automatic reset after power failure
- Output of normal operation signals/malfunction signals

2. Field Wiring

For interconnecting wiring, use Daikin KDC100A12 cable (not supplied) or other similar cable. The cable should have the specifications shown below.

■ Optional cable KDC100A12 (without connectors)

Specifications: 1/20 in.^{2}× 4 core (PCV or vinyl jacket)
Outer diameter: ϕ 1/4 in.
Length: 328 ft.
Colour: Grey

■ Other cable (commercially available)

Item	Outer dia.	Remarks
Cable for instrumentation (IPVV) 1/10 in.^{2} × 4-condctr.	2/5 in.	
Microphone cord (MVVS) 1/10 in.^{2} × 4-conductor	1/3 in.	Shielded
Microphone cord (MVVS) 1/20 in.^{2}× 4-conductor	1/4 in.	
Microphone cord (MVVS) 1/30 in.^{2} × 4-conductor	3/16 in.	
Intercom cable 1/40 in.^{2} dia. × 4-conductor		
PVC jumper wire (TJVC) (from 1/50 in. dia. × 4 pcs.)	—	

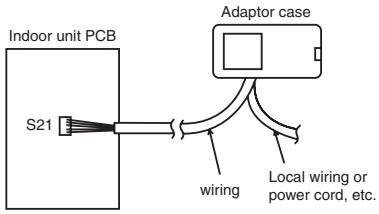
Note 1: Keep any wiring for the control unit away from the power cord to prevent electrical noise.
Note 2: Do not use cables shown above for power cord, inter-unit cord/cable or power cord for lamps.

Installation

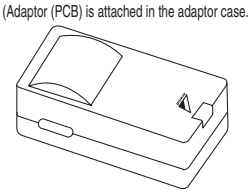
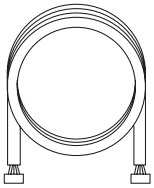
This product is available in two types. The **KRP413A1S · KRP413AA1S** is for installation in a case independent of the indoor unit, and the **KRP413A1** is for installation within the indoor unit.

1. KRP413A1S · KRP413AA1S

1 Installation diagram



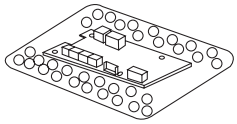
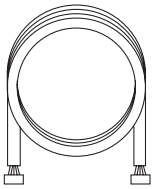
2 Components

① Adaptor case assy (Adaptor (PCB) is attached in the adaptor case.)	② Wiring (approx. 2 ft. 8 in.)
	
③ Accessories • Binding band (4 pcs.) • Securing tape for attaching to the indoor unit (2 sets) • Screws for attaching the adaptor case (4 pcs.) • Screws for attaching to the wall (3 pcs.)	
④ Installation manual	

2. KRP413A1

For this type, install the adaptor PCB within the indoor unit. The method of installation and connection vary depending on the model of the air conditioner. See your air conditioner installation manual for details.

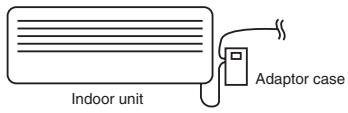
1 Components

① Adaptor PCB	② Wiring (approx. 1 foot)
	
③ Installation manual	

3. Attaching Adaptor Case Assy (for KRP413A1S · KRP413AA1S)

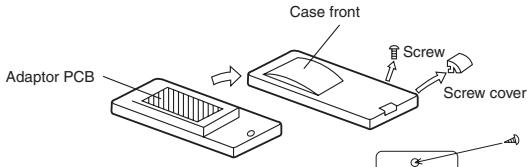
1 Using the screws (to mount on a wall, etc.)

- Use the 3 supplied screws to attach the case assy .



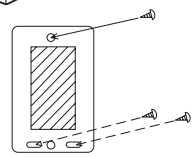
Install the adaptor case assy as close to the indoor unit as possible.

① Removing case front

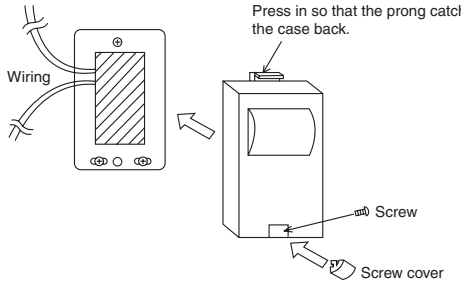


Remove the screw cover, one of the screws and then the case front.

② Attach the case back to the surface by tightening the screws through the screw holes (one round hole, two long holes).



③ After connecting the cables (refer to the following sections), replace the case front. Be careful not to damage the wiring in the case.



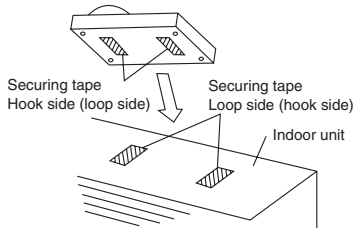
2 Using securing tape (to attach on the indoor unit)

- Attach the adaptor case with the supplied securing tape.

① Remove the case front (as for mounting on a wall).

② After connecting the cables (see the following sections), replace the case front. It can be screwed to the case back from the rear with the four supplied screws.
Be careful not to damage the wiring in the case.

③ Attach the hook side (loop side) of the included securing tape to the rear surface of the HA case, then attach the loop side (hook side) to the top of the air conditioner unit spaced at the same intervals.



To prevent the adaptor case assy from falling, do not use the securing tape for attaching it to a wall or other surface.

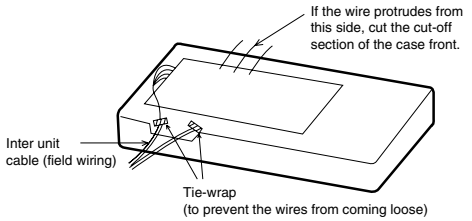
Wiring

1. Wiring

① Connect one end of the wiring to connector S21 of the PCB in the indoor unit.
② Connect the other end of the wiring to connector S6 of the adaptor PCB.
③ Connect field wiring according to the functions assigned to each connection terminal of the adaptor PCB.
④ Secure all wires.

1 Securing wires in the adaptor case assy (for KRP413A1S · KRP413AA1S)

- Fasten with a tie-wrap so that wires will not come loose even if pulled.


If the wire protrudes from this side, cut the cut-off section of the case front.
Inter unit cable (field wiring)
Tie-wrap (to prevent the wires from coming loose)

2 Securing wires in the indoor unit (for KRP413A1)

- The method for securing wire varies depending on the model of the air conditioner. See your air conditioner installation manual for details.

2. Automatic Reset After Power Failure

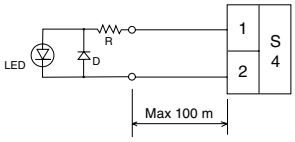
- This PCB stores the following data in the event of a power failure (common features).

① On/Off (see Note 1) ② Operation modes ③ Temperature setting
④ Air flow rate ⑤ On/Off status of remote controller
(Note 1 When SW1-2 is in Off mode, the unit will not be activated.)

3. Monitor Signal Output (normal operation and malfunction)

- Maximum length of the wiring is 100 m.

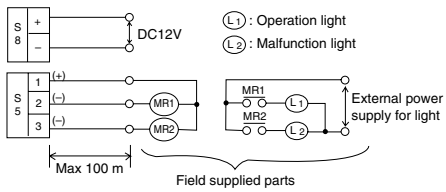
1 Monitor signal output for LED



■ **Locally procured parts**

Item	Manufacturer	Type
LED	Toshiba	TLG208 (green) TLR208 (red)
D	Rohm	1S2473
R		510 ohm 1/4W

2 Monitor signal output (normal operation and malfunction)using external relay contacts



■ **Field procured parts (Recommended external relay contacts)**

Manufacturer	Type	Coil rated voltage	Coil resistance
Omron	MY relay	12 V DC	160 ohm ± 10%
Matsushita	HC relay	12 V DC	160 ohm ± 10%

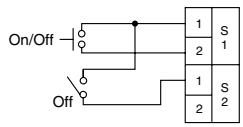
4. Connection with Remote Controller

Example connections with three kinds of remote controllers are shown bellow.
Note: These connections cannot be used in combination.

1 Generic remote controller

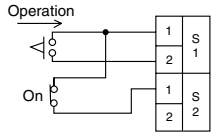
- Set SW1-1 to Off and select Operation Mode 1.

<Instantaneous Contact>



- The remote controller most recently used (local or air conditioner) takes precedence.
- Use a remote controller with a pulse width of 100 msec or more.

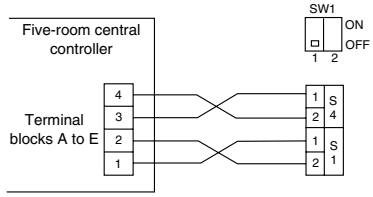
<Normal Contact>



- Power On/Off cannot be controlled from the unit's remote controller.
- When power is restored after a power failure in this mode, On or Off is determined according to the current settings of the remote controller.

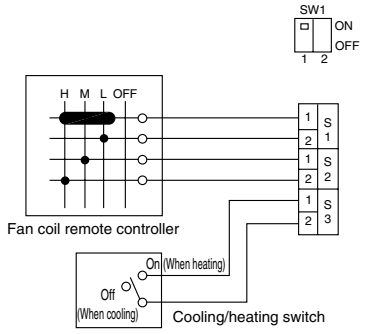
2 Five-room central controller (KRC72)

- Set SW1-1 to Off and select Operation Mode 1.
- The remote controller most recently used takes precedence.



3 Fan coil remote controller

- Set SW1-1 to On and select Operation Mode 2.
- Most settings (power On/Off, air flow rate, mode change) cannot be made using the air conditioner's remote controller.
- When power is restored after a power failure in this mode, On or Off is determined according to the current settings of the remote controller.
- When the Cooling /Heating mode is changed, use the air conditioner's remote controller to adjust the temperature.

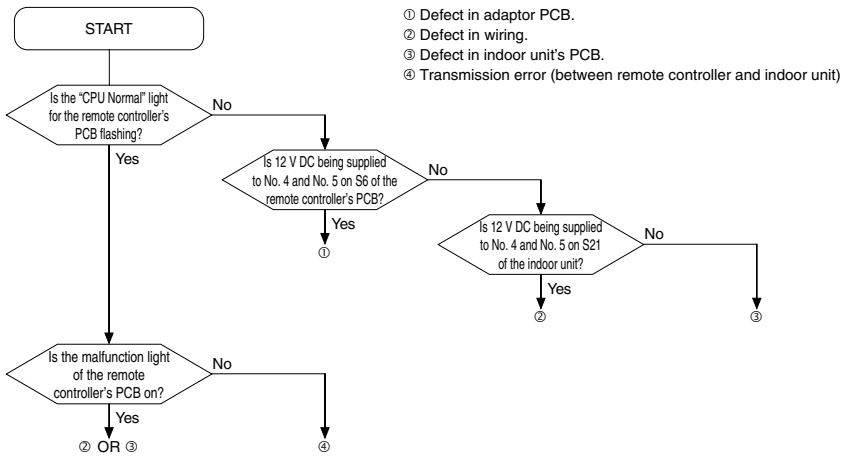


Test Operation and Confirmation

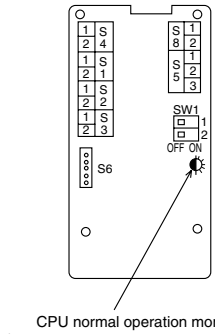
1. When the System is Not Working

☐ Is the air conditioner working properly?
☐ Are the connectors of the wiring properly connected?
☐ Are the remote controller and field wiring properly connected?
☐ Are all switch settings correct?
☐ If there is nothing apparently wrong, conduct a diagnostic check using the following procedure.

■ Diagnostic check


START
Is the "CPU Normal" light for the remote controller's PCB flashing?
No
Yes
Is 12 V DC being supplied to No. 4 and No. 5 on S6 of the remote controller's PCB?
No
Yes
①
Is 12 V DC being supplied to No. 4 and No. 5 on S21 of the indoor unit?
No
Yes
②
③
Is the malfunction light of the remote controller's PCB on?
No
Yes
② OR ③
④
① Defect in adaptor PCB.
② Defect in wiring.
③ Defect in indoor unit's PCB.
④ Transmission error (between remote controller and indoor unit)

2. Switch Settings and Connection Terminals



CPU normal operation monitor
(Flashes when the operation is normal.)

SW1-1	Selecting the operation mode	OFF	Operation mode 1 (Used with the exception of fan coil remote controller settings)	
		ON	Operation mode 2 (Used with fan coil remote controller settings)	
SW1-2	Selecting On/Off when power is restored after a power failure	OFF	Always Off	
		ON	Off if operation was in Off mode before power failure; On if operation was in On mode before power failure	
S1 S2 S3	SW1-1: OFF (Operation mode 1)		Instantaneous contact	Normal contact
		S1 (1) - S2 (1)	OPEN	CLOSE
		S1 (1) - S1 (2)	Pulse input On/Off switching	OPEN, Not activated
				CLOSE, Activated
		S2 (2), S3	Not used	
	SW1-1: ON (Operation mode 2)	S1, S2 OPEN	Not activated	
		S1 (1) - S1 (2) CLOSE	On, airflow: L tap	
		S1 (1) - S2 (1) CLOSE	On, airflow: M tap	
		S1 (1) - S2 (2) CLOSE	On, airflow: H tap	
		S3 (With the remote controller only)	OPEN, Cooling	
			CLOSE, Heating	
S4	(1) - (2)	Voltage on (DC12 V), normal operation light output		
S5	(1) - (2)	Normal operation light output (power for light required)		
	(1) - (3)	Malfunction light output (power for light required)		
S6 connector		Connect with connector S21 on the PCB of the indoor unit		
S8	(+) - (–)	Relay DC 12 V power supply terminal (Field supplied parts)		

2P031616-1B

13.2.2 KRP928B2S

Safety Precautions

- Read these Safety Precautions carefully to ensure correct installation.

This manual classifies precautions into WARNING and CAUTION.

⚠**WARNING :** Failure to follow WARNING is very likely to result in such grave consequences as death or serious injury.

⚠**CAUTION :** Failure to follow CAUTION may result in serious injury or property damage, and in certain circumstances, may result in a grave consequence.

Be sure to follow all the precautions below ; they are all important for ensuring safety.

⚠ WARNING

- **Installation should be left to the dealer or another qualified professional.**
  Improper installation by yourself may cause malfunction, electrical shock, or fire.
- **Install the set according to the instructions given in this manual.**
  Incomplete or improper installation may cause malfunction, electrical shock, or fire.
- **Be sure to use the standard attachments or the genuine parts.**
  Use of other parts may cause malfunction, electrical shock, or fire.
- **Disconnect power to the connected equipment before starting installation.**
  Failure to do so may cause malfunction, electrical shock, or fire.

⚠ CAUTION

- **An earth leakage circuit breaker should be installed.**
  If the breaker is not installed, electrical shock may occur.
- **Do not install the set in a location where there is danger of exposure to inflammable gas.**
  Gas accumulated around the unit at the worst may cause fire.
- **To prevent damage due to electrostatic discharge, touch your hand to a nearby metal object (doorknob, aluminum sash, etc.) to discharge static electricity from your body before touching this kit.**
  Static electricity can damage this kit.
- **Lay this cable separately from other power cables to avoid external electrical noises.**

- After installation is complete, test the operation of the PCB set to check for problems, and explain how to use the set to the end-user.

1.Overview, Features and Compatible Models

This kit is the interface required when connecting the central controller and a Daikin Room Air Conditioner. Use of the central controller makes it possible to perform the following monitoring and operations. It is compatible with room air conditioners which have an HA connector S21.

1. Run / stop for the central controller and wired remote controller, operating mode selection, and temperature can be set.
2. The operating status, any errors, and the content of those errors can be monitored from the central controller and wired remote controller.
3. Run / stop for the central controller and wireless remote controller, operating mode selection, and the temperature setting can be limited by the central controller.
4. Zone control can be performed from the central controller.
5. The unit can remember the operating status of the air conditioner before a power outage and then start operating in the same status when the power comes back on.
6. Card keys, operating control panels, and other constant / instantaneous connection-compatible equipment can be connected.
7. The Operating / error signals can be read.
8. HA JEM-A-compatible equipment can be connected.
9. The indoor temperature can be monitored from the Ve-up controller.

Precaution

1. When reading the Operating / error signals, a separate external power source (DC 12V) is needed.
2. A separate timer power source (DC 16V) is needed when using the schedule timer independently, and not in conjunction with other central controllers.
3. The range of temperatures that can be set from the central controller is 18°C to 32°C in cooling and 14°C to 28°C in heating.
4. Fan operation cannot be selected from the central controller or wired remote controller.
5. Group control (i.e., control of multiple indoor units with a single remote controller) is not available.
6. Monitoring is not available of the thermo status, compressor operating status, indoor fan operating status, electric heater, or humidifier operating status.
7. Forced thermo off, filter sign display and reset, fan direction and speed settings, air conditioning fee management, energy savings instructions, low-noise instructions, and demand instructions cannot be made.

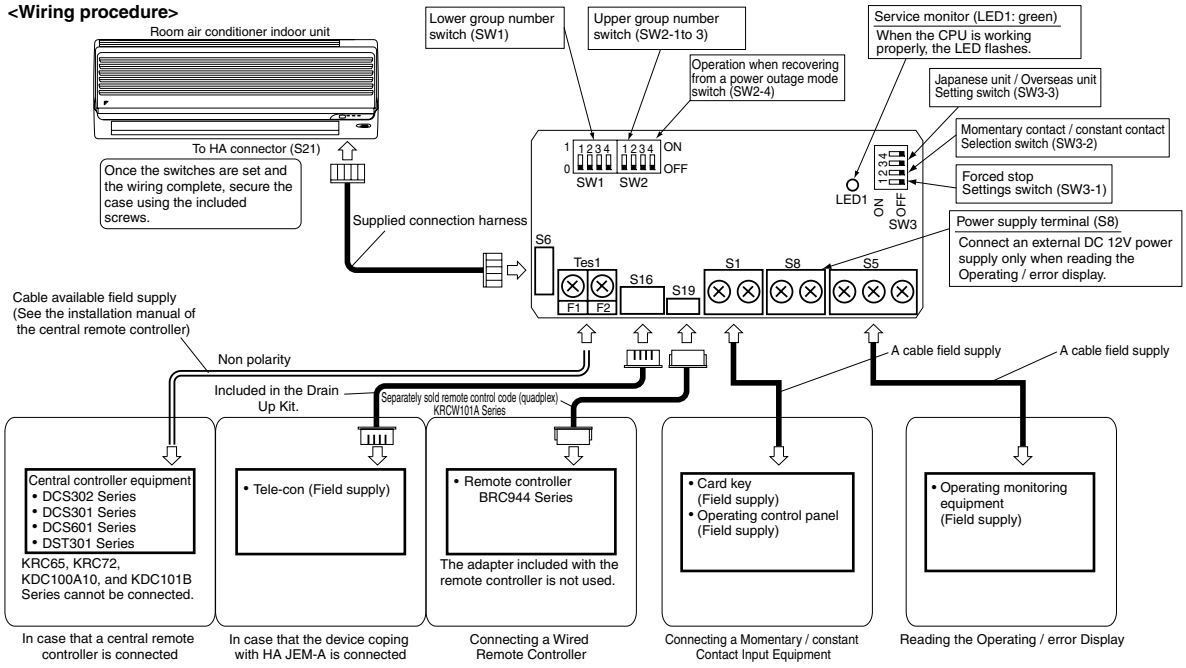
2.Component Parts and Separately-Sold Parts which are Required

This kit includes the following components. Check to ensure that none of these are missing.

Parts	Q'ty	Parts	Q'ty
Kit assy PCB is in the housing. Screw cover	1	Connection harness (about 1.6m)	1set
		Mounting screws	3pcs.
		Binding band	1pc.
		Installation manual	1set

3.Names of Parts and Electric Wiring

<Wiring procedure>


Room air conditioner indoor unit
To HA connector (S21)
Once the switches are set and the wiring complete, secure the case using the included screws.
Supplied connection harness
Lower group number switch (SW1)
Upper group number switch (SW2-1to 3)
Operation when recovering from a power outage mode switch (SW2-4)
Service monitor (LED1: green)
When the CPU is working properly, the LED flashes.
Japanese unit / Overseas unit Setting switch (SW3-3)
Momentary contact / constant contact Selection switch (SW3-2)
Forced stop Settings switch (SW3-1)
Power supply terminal (S8)
Connect an external DC 12V power supply only when reading the Operating / error display.
SW1 SW2 SW3 LED1
S6 Tes1 F1 F2 S16 S19 S1 S8 S5
Cable available field supply (See the installation manual of the central remote controller)
Non polarity
Included in the Drain Up Kit.
Separately sold remote control code (quadplex) KRCW101A Series
A cable field supply
A cable field supply
Central controller equipment
• DCS302 Series
• DCS301 Series
• DCS601 Series
• DST301 Series
KRC65, KRC72, KDC100A10, and KDC101B Series cannot be connected.
• Tele-con (Field supply)
• Remote controller BRC944 Series
The adapter included with the remote controller is not used.
• Card key (Field supply)
• Operating control panel (Field supply)
• Operating monitoring equipment (Field supply)
In case that a central remote controller is connected
In case that the device coping with HA JEM-A is connected
Connecting a Wired Remote Controller
Connecting a Momentary / constant Contact Input Equipment
Reading the Operating / error Display

4.Switch Settings

NOTE	Turn the power on after all the switches have been set. Settings made while the power is on are invalid.

Open the Kit's case and set the switches on the circuit board.

(1) For Overseas / Japanese unit setting (SW3-3)
Room air conditioners, different methods are used for setting the temperature in automatic mode, so this switch needs to be set.

Destination	SW3-3 setting	What Happens
Japan	OFF (Factory setting)	• "Automatic" operation is not available from the central controller. When using "automatic" operation using the wireless remote controller, the central controller displays automatic cooling (heating) and 25°C. Even if the temperature is changed, it will return to 25°C after a while.
Overseas	ON	• "Automatic" operation is available from the central controller.

(2) Group number settings (SW1 and SW2-1 to SW2-3)
Set these when using the central controller. (Set to the ■ side.) Do not set more than one unit to the same number.

However, these settings do not need to be made when using the schedule timer independently.
(The settings are needed when used in conjunction with another DCS Series central controller.)
In this case, the schedule timer performs an auto address after the power is turned on, so new group numbers are automatically set. Settings made using the switches will be overwritten.

SW2 setting	Upper group NO.
1 2 3	1—
1 2 3	2—
1 2 3	3—
1 2 3	4—
1 2 3	5—
1 2 3	6—
1 2 3	7—
1 2 3	8—

SW1 setting	Lower group NO.	SW1 setting	Lower group NO.
1 2 3 4	0 0	1 2 3 4	0 8
1 2 3 4	0 1	1 2 3 4	0 9
1 2 3 4	0 2	1 2 3 4	1 0
1 2 3 4	0 3	1 2 3 4	1 1
1 2 3 4	0 4	1 2 3 4	1 2
1 2 3 4	0 5	1 2 3 4	1 3
1 2 3 4	0 6	1 2 3 4	1 4
1 2 3 4	0 7	1 2 3 4	1 5

NOTE also that a separate timer power source is needed when using the schedule timer independently.
Power source specs: DC 16V, +10%, -15%, 200mA.
Recommended power source: Omron S82J-01015A. (Should be used with the output voltage adjusted to the center, DC 16V.)

(3) Settings when recovering from a power outage (SW2-4)
This selects whether to restart operation when the power comes back on after a power outage occurred during operation. This setting is given priority in cases where the indoor unit has an auto start ON / OFF jumper. Note also that regardless of whether switch SW2-4 is on or off, the operating mode, set temperature, fan direction and speed settings, and remote control prohibition status are stored.

SW2-4 setting	What Happens
OFF (Factory setting)	Stops after recovering from a power outage
ON	Stops if the unit was stopped before the power outage and runs if it was running.

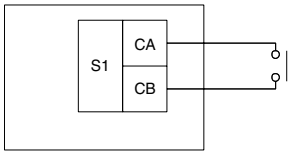
(4) Contact input function settings (SW3-1 to SW3-2)
When using contact input (S1), choose one of the following functions.

S1 operating mode	SW3-1 setting	SW3-2 setting	What Happens	Control mode
Instantaneous contact input (factory setting)	OFF	OFF	The operating status of the air conditioner is reversed by an instantaneous input of 100 msec or more.	Last command priority
Constant contact input		ON	Contact - Open to close: air condition runs. Close to open: air conditioner is stopped (NOTE 1).	ON / OFF control is rejected (operate / stop / timer prohibition) (NOTE 2).
Forced stop or remote controller permission input	ON	Invalid	Contact - Open to close: air condition stops (forced stop). Close to open: no change in operating status.	During a forced stop, all remote controller actions are prohibited.

NOTE1: Since central equipment and HA JEM-A-compatible equipment both use last command priority, the contact status and operating status of the air conditioner might not match sometimes.
Example: If the unit is run from the central controller while the air conditioner is stopped with an open contact, the contact will be open and the unit will be running.

NOTE2: Operating mode and fan direction and speed settings can be changed.

KRP928B2S



Run / stop Input
Contact specs
No-voltage minute electric current contact
(Minimum applicable load DC 12V, 1mA or lower)

Total wire length max: 100m

5.Control Codes

When using a central remote controller, the operating codes can be used to limit operation from wireless remote controllers.
○ : permitted; × : prohibited

S1 operating mode	Control mode	Control code	Operations from the remote controller: "Run" control from the central controller: Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	"Stop" control from the central controller: Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	Operations from central controller, contact input and HA JEM-A input
Instantaneous contact mode	ON / OFF control is rejected	0,1,3	×	×	○	○	×	×	○	○	○
		10,11	×	×	×		×	×	×		
	Only OFF control is accepted	2 12–19	×	○	×		×	○	×		
	Central priority	4	○	○	○		×	○	×		
		5	○	○	○		×	×	○		
	Last command priority	6,7	○	○	○		○	○	○		
	Timer operation is accepted by remote controller	8	○	○	○		×	○	×		
			(Only during timer operation)								
		9	○	○	○		×	×	○		
			(Only during timer operation)								
Constant contact mode			×	×	○		×	×	○		
Forced stop			×	×	×	×	×	×	×	×	

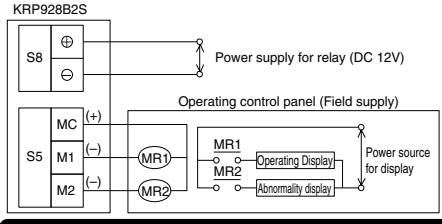
The remote controller permission / prohibition settings using the Ve-up controller are as follows.
○ : permitted; × : prohibited

S1 pin operating mode	Ve-up controller settings: Start / stop	Change operating mode	Change set temperature	Operations from the remote controller: Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	Operations from central controller, contact input and HA JEM-A input
Instantaneous contact mode	ON / OFF control is rejected	permitted	permitted	×	×	○	○	○
			prohibited	×	×	○		
		prohibited	permitted	×	×	×		
			prohibited	×	×	×		
• Constant contact mode	Only OFF control is accepted	permitted	permitted	×	×	○		
			prohibited	×	○	×		
		prohibited	permitted	×	○	×		
			prohibited	×	○	×		
Instantaneous contact mode	Last command priority	permitted	permitted	○	○	○		
			prohibited	○	○	○		
		prohibited	permitted	×	○	×		
			prohibited	×	○	×		
Constant contact mode		permitted	permitted	×	×	○		
			prohibited	×	×	○		
		prohibited	permitted	×	×	×		
			prohibited	×	×	×		
Forced stop	Does not affect settings			×	×	×	×	

6.Read Operating / Error Display Signal

The Operating / error signals can be read from the contact output (S5).
Output specs
M1: Turn MR 1 ON when the air conditioner is running.
M2: Turn MR 2 when a communication error has occurred between the KRP928B2S and the air conditioner, or MR 1 is ON and the unit has stopped after an error.
MR 2 is not turned ON during a warning.

KRP928B2S



Relay specs (MR1 and MR2)
Coil voltage: DC 12V
Coil resistance: 160Ω ± 10%
(Matsushita Electric HC Relay, Omron MY Relay)
Wiring length
Max: 100m

7.Combining Equipment

The central controller can be combined with the following devices.

	Central Remote Controller	ON / OFF controller	Schedule timer	D-BIPS	Forced stop contact input	Constant contact input	Instantaneous contact input	HA JEM-A-compatible equipment	Wired Remote Controller	Wireless Remote Controller
Central Remote Controller	○	○	○	○	○	○	○	○	○	○
ON / OFF controller	○	○	○	○	○	○	○	○	○	○
Schedule timer	○	○	×	×	○	○	○	○	○	○
D-BIPS	○	○	×	×	○	○	○	○	○	○
Forced stop contact input	○	○	○	○	×	×	×	○	○	○
Constant contact input	○	○	○	○	×	×	×	○	○	○
Instantaneous contact input	○	○	○	○	×	×	×	○	○	○
HA JEM-A-compatible equipment	○	○	○	○	○	○	○	×	○	○
Wired Remote Controller	○	○	○	○	○	○	○	○	×	×
Wireless Remote Controller	○	○	○	○	○	○	○	○	×	○

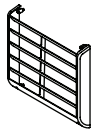
3P157704-2A

13.2.3 KPW937A4

■ Before Installation

Checking the parts

Check the following parts

Name	Louver	Installation manual
Shape	 With 4 screws	
Quantity	1piece	1piece

■ Installation Procedure

Selection of Installation Location

Use when installing in a location that meets the following conditions.

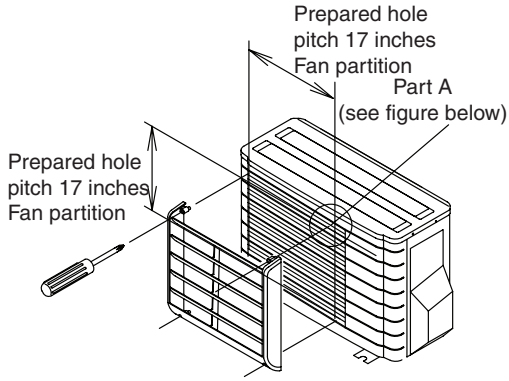
- When installing near the border to a neighbor's house
- If exhaust blows directly on passers-by because outdoor unit is installed facing a road.
- Changing the fan direction of the outdoor unit to prevent it blowing directly on shrubbery, etc.

Installation of Louver

- Installation is possible in the four directions: upward, downward, rightward, and leftward.
- The installation screws are attached to the louver.
- First temporarily attach the louver with 4 screws, then check that the angle is correct, and finally tighten the screws fully.

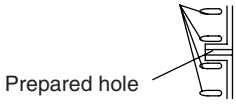
⚠CAUTION

1. Install so that a short circuit is prevented.
2. For the use in snowy regions, avoid installation with the air outlet facing upward. Install so that the air outlet faces leftward, rightward, or downward.
   Snow accumulates in the air outlet of the outdoor unit, causing malfunction of the main body of the outdoor unit.
3. Be advised that if the fan direction is up, dead leaves and other foreign matter easily accumulates in the exhaust vent.

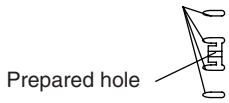


The prepared hole is in between the grating of the grille. Part A (prepared hole) cross section (the shape of either a or b)

a) Grille grating



b) Grille grating

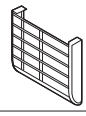
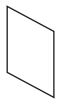


4P104499-1A

13.2.4 KPW945A4

■ Before installation

Check the following parts

Name	Louver	Truss tapping screw	Installation manual
Shape			
Quantity	1piece	M4x4screws (15 MBH Unit) M5x4screws (18, 24 MBH Unit)	1piece

■ Installation Procedure

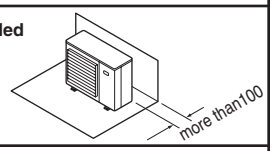
Selection of Installation Location

Use when installing in a location that meets the following conditions.

- When installing near the border to a neighbor's house
- If exhaust blows directly on passers-by because outdoor unit is installed facing a road.
- If exhaust blows directly on vegetation

Space Needed for Installation

- **A minimum of 4 inches are needed between the back of the outdoor unit and any obstructions (walls, etc.)**



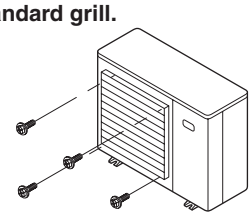
Installation of Louvers

⚠ Caution

Attach the louvers overlapping the standard grill.
Installing the louvers without the grill would allow hands to enter the fan area, which is dangerous, so be sure to install the standard grill.

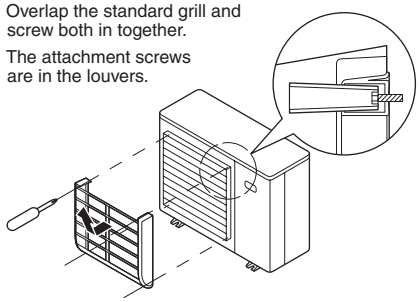
When pointing up

(1) Remove the 4 attachment screws from the standard grill.

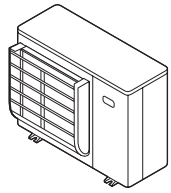


(2) Install the louver pointed up.

- Overlap the standard grill and screw both in together.
- The attachment screws are in the louvers.

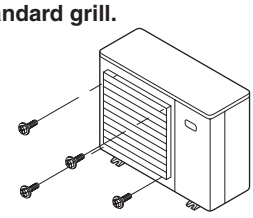


(3) Installation complete



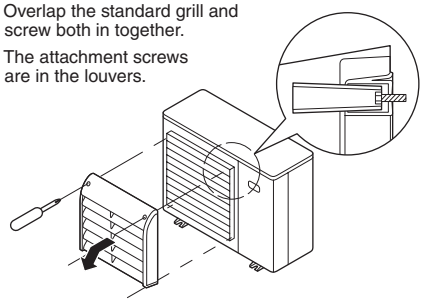
When pointing down

(1) Remove the 4 attachment screws from the standard grill.

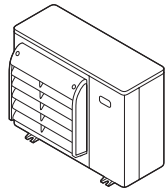


(2) Install the louver pointed down.

- Overlap the standard grill and screw both in together.
- The attachment screws are in the louvers.



(3) Installation complete



3P089958-2C

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JMI-0107

JQA-1452

About ISO 9001

ISO 9001 is a plant certification system defined by the International Organization for Standardization (ISO) relating to quality assurance. ISO 9001 certification covers quality assurance aspects related to the "design, development, manufacture, installation, and supplementary service" of products manufactured at the plant.

EC99J2044

About ISO 14001

ISO 14001 is the standard defined by the International Organization for Standardization (ISO) relating to environmental management systems. Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities to meet the requirements of ISO 14001.

Dealer

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